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LECTURES

ON

DISEASES OF THE RECTUM.

DELIVERED AT THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF THE CITY OF NEW YORK.

BY

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PREFACE.

These lectures were delivered at the Medical Department of the University of the City of New York, and were subsequently published, from stenographer's notes, in the *Medical Gazette.* The demand for them soon exhausted the numbers of the journal in which they appeared, and owing to continued and repeated calls the publishers have deemed it advisable to present them in the present form.

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LECTURES

—ON—

DISEASES OF THE RECTUM.

LECTURE I.

INTRODUCTION—EXAMINATION OF THE RECTUM —ABSCESS OF THE RECTUM.

GENTLEMEN—During a part of the spring session upon which we are now entering I propose to consider a class of surgical diseases which (probably owing to the fact that they are situated at the lower portion of the body) are usually crowded out of the regular winter term, but which are, nevertheless, equally as important to the general practitioner, in my judgment, as any that are then studied.

I have reference to certain diseases of the rectum. For two or three additional reasons also I have thought that we could most conveniently, and at the same time advantageously, study these disorders at this time: First, because they are, perhaps, as common in their occurrence as any which afflict man; secondly, because I believe, that as a rule, their pathol-

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Having finished them, proceed to make the examination. There are various postures in which the examination can be conducted. Some surgeons prefer to have the patient kneeling upon a chair with the body bent over the back. Others to kneel upon a table, a couch, or a lounge, with the head lower than the buttocks. Other surgeons again prefer the lithotomy position, the patient lying upon his back with his thighs drawn up toward the abdomen, and perhaps his feet and hands fastened together. But probably the most convenient position, so far as the facility of the surgeon is concerned, and certainly the most delicate for the patient, especially if a female, is to lie upon the side with the legs drawn up toward the abdomen and the buttocks close to, or even projecting a little from the edge of the table. I specify a table, because I think it should always be selected for this purpose in preference to a bed; the reason for which is obvious, that with a bed or any thing that is soft in structure the patient's hips sink down into it and the difficulties of the examination are very much increased. The same objection holds good with regard to vaginal examinations. If possible to avoid it, I never make a vaginal examination with the patient lying on a bed, preferring always a hard table with simply a quilt spread over it, and the patient exposed in a good light.

Before putting the patient in position, however, the rectum should be emptied and, if possible, well cleansed by the use of a large injection of warm

water. This accomplishes two purposes. First, it enables the examiner to obtain a perfectly good view of the condition of the mucous membrane of the lower part of the gut. In the second place, and perhaps more important than the first, it enables the patient to strain the parts to be examined down into view without the danger or fear of his becoming "a victim of misplaced confidence." If you have had no experience in examining diseases of the rectum, you will have something to learn when you come to your first female patient. You will find, to carry out the idea I have just advanced, that with a woman the fear of slipping her wind in the presence of the physician, and, above all, the fear of voiding a small quantity of liquid fæces, while he is making the examination, is, ofttimes, so great that in order to avoid it she will contract all of her muscles, especially the sphincters, and a satisfactory exploration will be utterly impossible. For these reasons I lay particular stress upon the point that the rectum should be emptied and washed out before you begin. As a preliminary to the physical examination you will note what is to be seen externally, such as discoloration of the skin, the condition of the anus, whether patulous or contracted; you will observe the presence of ulcerations or fistulous openings. Next you will feel around the anus for indurations; by this means the situation of an abscess or a sinus may be discovered. Notice what protrusion has taken place, if any, since the injection was voided;

notice its character, structure, vascularity, mode of protrusion from the bowel, by peduncle or otherwise.

Finally examine the interior of the bowel with the finger. Never neglect this under any circumstances. Anoint the verge of the patient's anus and your own index finger very thoroughly with vaseline, cocoa-butter, lard, sweet oil, or some other bland lubricant. Then introduce the finger slowly, stopping occasionally until the sphincter becomes quiet and accustomed to the presence of the foreign body. Ask the patient to bear down a little from time to time, and so force the rectum over the finger. In this way the sphincter will yield and allow the finger to pass on without pain.

By this examination you will learn very much, especially if your finger has become accustomed to feeling the interior of these parts, and will often obtain all the information that is needed in detecting internal fistulous orifices, polypi, ulcerations, fissures, hemorrhoids, etc. Since it is to be remembered that, with some rare exceptions, the parts requiring this kind of interrogation are situated low down, within an inch and a half of the verge of the anus, and very frequently within the circle of the external sphincter. I think a very common mistake is made in conducting this examination of searching for the disease too high up. The seat of the lesion in this way is passed by, and if we find nothing at the full extent of the indeu finger, we conclude there is nothing there.

Now, recollect, as a practical point, that in the majority of cases of disease of the rectum that you will be called upon to treat, you will find the lesion within an inch and a half of the anus, frequently just within that dilated portion of the gut which is between the internal and external sphincters. Frequently, also, as I have just said, within the grasp of the external sphincter. In examining for mischief high up in the bowel, and beyond the reach of the finger with the patient in this position, it is sometimes of advantage to allow him to stand upright on the left foot with his right foot resting on a chair, and requesting him to strain. By so doing the weight of the abdominal viscera, assisted by the patient's own efforts in bearing down, will often bring within the reach of your finger parts that were wholly inaccessible in any other posture, and will enable you to make a very satisfactory digital exploration.

Useful, however, as these means are, in order to diagnose the existence of ulceration, strictures and malignant growths too high up in the bowel to be reached with the finger, you will sometimes be obliged to administer an anæsthetic, elevate the hips so that the intestines will gravitate toward the diaphragm, and then gently and gradually, by palpation, dilate the sphincter, using four or five minutes to accomplish the purpose.

How shall you do it? Having anointed the anus and the fingers of the right hand, introduce first one

finger into the rectum just as I have instructed you to do in making an ordinary digital examination. As the sphincter muscle becomes accustomed to the presence of this finger, slip in another, in a few moments introduce a third, and finally a fourth. If you do not succeed in this manner you may then introduce the thumbs of your two hands back to back, spread out your fingers so as to grasp the buttocks on either side, then separate your thumbs so as to paralyze, temporarily, the action of the sphincter muscles. When thoroughly done you will find that, aided by the use of a couple of common retractors (little pieces of bent wire or iron), and the bowel cleansed by sponges mounted on holders, nothing can escape careful observation, especially as you can then introduce even a large bi-valve or a Sims's vaginal speculum so that even recto-vaginal and recto-vesical fistulæ can readily be closed. In some rare cases, also, in which the disease is situated high up in the gut, very valuable information is derived by introducing the whole hand and arm into the rectum. But to do this safely the operator must have a small hand, must use an abundance of grease, and take plenty of time. I never have had my hand in a patient's rectum. My hand is too large, and I should expect if I put it in there to tear down every thing that came in the way.

If this means of making a diagnosis is to be adopted it must be done by some one who has a very small hand; a man who has never done very much

hard work. My impression is, however, that with the male subject, even the smallest adult hand is generally so compressed in the sigmoid flexure of the colon as to prevent very extensive manipulation, and so be of very little use in the way of making a diagnosis. With a female subject having a large pelvis, the case might be different.

Again, in certain diseases of the anterior wall of the rectum in married women, or in those who have borne children, this part can be very easily everted, turned out of the anus altogether, by introducing one or two fingers into the vagina and hooking the part down through the anus ; making firm pressure on the posterior wall of the vagina from above downward and backward forces out the anterior wall of the rectum. I have frequently operated upon internal hemorrhoids in this way in married women, and it is a means which is adopted constantly in the hospitals of New York in cases of that kind. Recollect, however, that it is limited in its application to the anterior wall of the rectum, low down, and is utterly useless in young women or in those who are unmarried and have not borne children.

I have alluded to the fact, in passing, that we sometimes make use of the speculum in examinations of the rectum. These instruments are of various kinds and some of them are ill-adapted for the object in view. Thus, some of them are of very little use in consequence of the bulging of the mucous membranes between the narrow blades of

the instrument. I prefer, then, in examination for diseases which are situated very low down in the rectum, such as the internal orifice of a very superficial fistula, or a fissure situated just within the verge of the anus, one of these little glass specula. This one has a slit running very nearly its whole length. (See Fig. 1.) You can anoint the parts, introduce it, and by turning it around the anus, first to one side and then to the other, you will probably come in contact with the disease. Another

FIG. 1.

variety which I use very frequently is this one, constructed on the same principle as the other except that the fissure or fenestra in the side is of an oval form, is placed in the middle of one side and does not run to the extremity. It is a very useful speculum in examining for the presence of fissures. But, I find myself using more often than any thing else for this purpose the ordinary Sims's speculum, the same as used for the vagina. Generally, however, I employ one that has a little longer blade, which

enables me to carry it further up the rectum. You can apply this to any part of the circumference of the anus, lift the parts up, and, especially if the patient is anæsthetized, the sphincter muscle relaxes, the air passes in and "balloons" the rectum, distends it, in other words, so that you can obtain a perfectly satisfactory view of its interior.

Several other instruments are in common use. In the first place there is what is called the bi-valve rectal speculum (See Fig. 2), an instrument made with two narrow polished blades which can be separated by

FIG. 2.

compressing the handles, and fastened in that position by means of a screw. The objection to the instrument, I have already stated, viz., that the mucous membrane protrudes between the blades in such a way that you can not get a satisfactory view of the parts. A better one, is that which is known as the tri-valve speculum, an instrument that consists of three blades instead of two, which are manipulated by simply turning the handle. The third blade is generally sufficient to catch the redundant folds

of mucous membrane which protrude between the blades of the bi-valve instrument, holding them out of the way so that you can get a pretty fair view of the interior of the bowel.

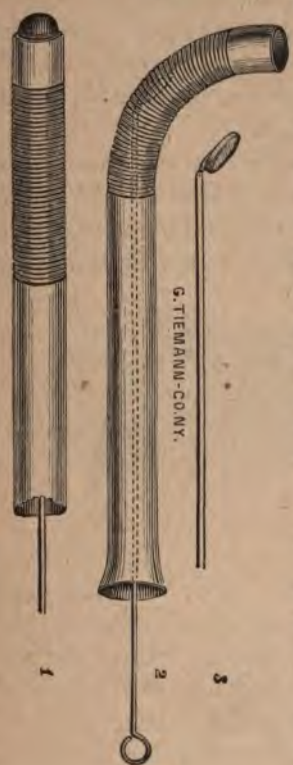

FIG. 3.

There are several other instruments here, which would, perhaps, be more appropriately considered in connection with the special diseases for which they are used, but, for certain reasons, I will allude to them briefly this morning, and speak more particularly of them when we come to study the special conditions in which they are employed.

First, then, we have what is called a rectal endoscope, an instrument devised for examining the rectum high up, *i. e.*, in the neighborhood of the sigmoid flexure. It consists of a metallic tube polished on the inside, terminating at one end in a closely coiled spiral spring in order to give the instrument flexibility so that it will pass along in the different curvatures

of the rectum. Into its interior is passed a plug of hard rubber or wood attached to a slender shaft made of whalebone. The plug, as you see, is rounded at one end, projects a little from the distal end of the tube and is intended to facilitate the introduction of the instrument. After the instrument has been introduced the plug is withdrawn, and by employing a head mirror, such as is commonly used with the laryngoscope, a powerful light can be thrown into the tube so that you can sometimes obtain a very good idea of the condition of the mucous membrane very much higher up than you could touch with your finger. Accompanying the instrument there is also a little metallic mirror, mounted on a long wire which is passed into the tube, and by throwing a strong light upon it you may get a pretty good image of the mucous membrane above this point. Unfortunately, however, the instrument is still in its infancy, and so far as my experience extends I think other arrangements

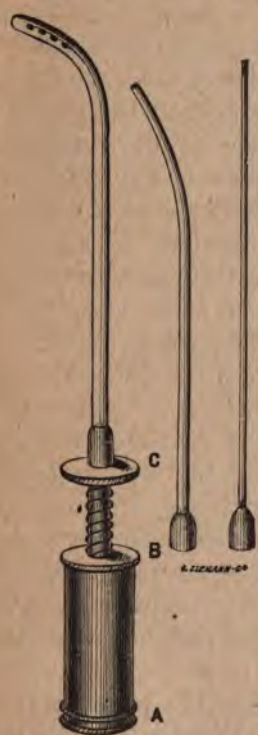

FIG. 4.

will have to be made with regard to the mirror before it will accomplish satisfactorily the object for which it is intended.

Here is an instrument devised by Dr. J. C. Hutchison (Fig. 4), which is of use in introducing semi-fluid substances, such as thin ointments into the rectum. It is constructed on the principle of a syringe, is made of hard rubber and consists of a cylinder and staff. The staff is a hollow tube, one end of which is curved and is perforated along its sides like a female catheter; the other end passes through an opening into the chamber of the cylinder, and is attached to a piston having a perforation in its middle corresponding to that in the tube. From a shoulder on the staff to the upper portion of the cylinder is a spiral spring which draws up the piston to the top of the chamber, thus enabling the syringe to be easily filled. The lower end of the cylinder is furnished with a screw cap which can be removed for the purpose of filling it. The advantage of the instrument is that it can be worked with one hand, by bracing it in the palm and pressing upon the shoulder with two fingers so as to compress the spiral spring; this produces pressure of the piston on the column of fluid, forcing the substance through the tube.

The next instrument that I show you is the rectal exploring sound, one which is used for detecting constrictions, tumors, foreign bodies, impacted fæces, etc., when beyond the reach of the finger;

(See Fig. 5) especially in the sigmoid flexure. It consists of a conical piece of ivory, hard rubber or wood, two inches in length and two and a quarter inches in circumference at its base, and secured by a screw to the end of a slender whalebone rod, fourteen inches long. The bulb is oiled, passed into the rectum, and the examination conducted much in the same manner as we employ the bougie-à-boule in certain diseases of the male urethra.

FIG. 5.

Here is an instrument which I should have shown in connection with the speculum. (Fig. 6). It consists of a long, narrow polished blade, concave on one side and convex on the other, and resembling a large, blunt gorget. The handle is attached at nearly a right angle to the blade. It is passed into the rectum on the finger with its concavity looking to-

ward the seat of the disease. The mucous membrane can then be seen reflected on its polished concave surface. In examining for fissures it is sometimes exceedingly useful.

While you are looking at the instruments let me say to you that some forms of rectal disease are very much more common than others, notably fistula and piles. Thus, to give you an idea of the relative frequency of these two varieties, in an analysis of about four thousand cases of diseases of the rectum which were collected a few years ago by Dr. Allingham in

FIG. 6.

England, it was found that no less than 2,173 cases out of the four thousand belonged to these two disorders, *i. e.* about 1,200 of them to fistula, and about 1,000 to hemorrhoids; about 800 of this 1,000 being internal hemorrhoids and about 200 external hemorrhoids. For this reason we will take for our first study the subject of fistula.

A fistula, as the term is used in connection with diseases of the rectum and anus, consists of a very narrow channel, the walls of which are usually indurated, and are lined with a low form of connective

tissue which resembles mucous membrane, but which is found to consist of a thin layer of poorly developed granulations, exuding an ichorous pus.

The causes of fistula, or I may say perhaps more properly, the causes of abscess, in this region which leads to fistula, are many and various, and may be specified as follows: First, injuries of all kinds, such as kicks, blows, falls, etc., applied to the region of the anus. Secondly, any injury which is done to the interior of the bowel by constipated stools, by the presence in the stools of foreign bodies such as fish bones and other hard substances which have been swallowed; by exposure to wet and cold, as for example by sitting down upon a damp seat after a person has been exercising and the body has become warm. Next I may mention the scrofulous diathesis. I shall tell you by and by that people who have consumption, or who are predisposed to phthisis in any way, are peculiarly prone to fistula of the anus. Certain conditions of the system, generally of depreciated health, in which there is a very marked tendency to the development of boils and carbuncles. Again, I may mention to you the fact which I have frequently observed, that in certain conditions of itching of the anus which demand for their relief an incessant use of the "scratcher-ani" muscles; where the parts are constantly irritated by the finger-nails, the shirt-tail and bed-clothes, there is set up an irritation of the absorbent vessels of the parts; this leads to an inflammation of the lymphatic glands

in the neighborhood; these, in their turn, undergo suppuration, a little abscess forms, and a fistula is the final result.

Finally let me say to you that fistula of the anus in children is almost invariably due to one or two causes; either the presence and irritation of pin-worms, which produce itching and the consequent irritation of the anus by the hands of the child, or they are dependent upon injuries applied to these parts in some way, such as kicks, blows, falls, and so on.

Now, in order that you may understand the nature of a fistula of the anus I must say something to you about the behavior of these abscesses of which I am speaking, and which lead to fistula.

Remember, then, that they may occur in four different localities. The first and most frequent variety is that which forms just underneath the integument close to the verge of the anus, in the connective tissue. It may be the result of a kick or of sitting down upon some hard substance, or exposure to wet and cold, as I have specified. Secondly, by ulceration of the mucous membrane of the rectum just within the sphincter muscle, and this abscess we generally find occurring in people who are scrofulous; who either have, or are predisposed to the occurrence of consumption. Thirdly, we have abscesses forming deeply down in the tissues in what is known as the ischio-rectal fossa, in that deep depression between the tuberosity of the ischium and

the rectum itself. In the fourth place we have them beginning in the submucous areolar tissue of the rectum.

Now, an abscess which comes under any one of these four heads may present itself to you either in an acute or a chronic form. If it comes as an acute abscess it will generally be accompanied by very severe symptoms. Not only locally but also in the way of constitutional disturbances. The patient will have fever, rapid pulse, headache, pains in the bones, a dry tongue, and thirst. Locally, he will have great pain, of a burning, lancinating character, and if you examine him you will find a hard, tender, indurated mass somewhere in the neighborhood of the anus.

If it be of the chronic variety there may be no pain whatever. It may come on, just as cold or chronic abscesses make there appearance any where else in the body, the only indication of its presence being a boggy, hard feel when you come to examine the parts. When you touch such an abscess you will find that it is not tender; not painful like the acute abscess, but it gives you a sensation as of something crepitating under your finger. The reason of this is simply, that it is usually a large cavity, and contains a quantity of air which has passed into it by means of a communication with the bowel. As a rule, however, abscesses in this region are of the acute variety. If an abscess here is allowed to take its own course, it will do one of two

things within a very few days; it will either point externally and break, like an abscess any where else; or, if it can do so more easily, it will burrow its way toward the lower part of the rectum, and probably just between the external and internal sphincters where the areolar tissue is very loose, it will make an ulcerated passage for itself into the interior of the gut. On the other hand if you have an acute abscess that forms deeply in the ischio-rectal fossa, then in all probability, unless treated properly at the outset, the pus will continue to burrow on the outside of the gut, probably getting behind both sphincter muscles, until it has opened for itself a passage at a considerable distance above the anus.

The treatment of these abscesses should be of the most decided character, and let me lay it down as a law to which there are very few exceptions, that if you wish to save your patient from the difficulties incident to a fistulous opening, you must make a very early incision. I believe it is very much better practice to put a knife into one of the phlegmonous masses in the neighborhood of the anus too early than to wait one minute too late. And if I had my choice, I should infinitely prefer to plunge a bistoury into a swelling of this kind, even before there was any fluctuation, and lay it open thoroughly rather than wait one minute after pus had collected. Why? Simply because if you leave pus in such a locality for a short time, the superincumbent parts perhaps being dense and thick and preventing the pus from

making its escape externally, it will burrow its way upward and perforate into the interior of the gut, usually between the external and the internal sphincters, sometimes at a very much higher level, and you will have what I shall soon describe to you as a blind internal fistula.

How shall you open the superficial abscess? I would recommend to you a method which you will find very useful. You will first anoint the index finger of your left hand very thoroughly, and also the anus; then pass your finger into the rectum, bend it down in this way, so as to get it above the abscess, put your thumb on the other side of the swelling outside the anus, so that you have the abscess firmly between your thumb and index finger. In that way you make the surface of the abscess tense. Now take your knife in the other hand, and, beginning externally, pass it well down into the abscess, and make a very free incision toward the bowel. It is not necessary in this case to divide the wall of the rectum or even the sphincter muscle as you would in operating for fistula. As soon as you have emptied the abscess of its contents, you will apply a linseed poultice for a few hours. Then have the cavity of the abscess washed out with a weak solution of carbolic acid, and if you should find within the next three days that there is not a very strong tendency to granulate and fill up on the part of the cavity of the abscess, I would advise you to pack it, perhaps every twenty-four hours, with some

placed as I have already directed for most of the operations about the rectum; namely, lying upon a hard table, exposed to a good light, and placed upon that side on which the abscess is located; an anæsthetic should be administered, since the operation which I am about to describe to you is one which is accompanied with great pain. Then with a long, straight or curved, sharp-pointed bistoury—whichever instrument you prefer—the abscess should be freely opened from behind forwards, that is, in the direction from the coccyx toward the perineum. The finger should then be introduced into the opening thus made, and if any secondary cavities are discovered, the septa between them and the original abscess should be thoroughly broken down so as to convert all into one large cavity. Should other channels be discovered, communicating with the first, they should, in like manner, be laid open at right angles to it with the knife.

The cavity thus made should then be cleansed, by syringing it out with weak carbolized water, and afterward carefully filled with absorbent cotton soaked in the solution of carbolic acid and oil already mentioned, viz., one part to ten or twelve. Do not pack it in so tightly as to distend the abscess, but simply fill its cavity. This is to be left in the abscess for perhaps one or two days; at the end of that time it should be taken out with the dressing forceps, the interior of the abscess washed and carefully examined. If it has a healthy appearance, introduce an-

other clean portion of the carbolized cotton. Or, if you prefer, and especially if the discharge from the abscess is abundant, introduce into the deeper portion of it a wad of the carbolized cotton, and put in for the remainder of the cavity a piece of india-rubber drainage tube, so as to allow the matter to escape as fast as it forms. In many cases treated in this way the patient makes a remarkably quick recovery. The cavity granulates just as it does in an abscess occurring any where else. It fills up rapidly. And inasmuch as the incision has not divided either of the sphincter muscles, the patient is not exposed to the risks to which I have already alluded, namely, incontinence of wind or fæces. The abscess has been opened early; has been treated properly, and has closed up without having perforated the bowel.

In other cases you will find that in spite of packing the abscess in this manner, the process of granulation will go on too slowly, and you will be obliged to stimulate it by injecting the cavity a little later along with various lotions, such as a weak solution of the sulphate of copper, or of the sulphate of zinc; or, what I like very much in these cases, a weak solution of nitric acid, perhaps four or five drops of the dilute nitric acid to an ounce of water. In other cases you will do better by penciling the cavity of the abscess over two or three times in the week with some of the balsams, such as the balsam of Peru, the balsam of copaiba, or a combination of the two in equal parts.

During the first two or three days after opening such an abscess, the bowels ought to be confined by giving at the time of the operation an astringent dose of opium, preferably administered by the rectum, and for this reason: If you give opium by the stomach the patient will probably be nauseated by it; he will have headache, and he will feel wretchedly for the remainder of the day. If, on the other hand, you give it by the rectum, in the form of an opium injection, such as thirty or forty drops of laudanum, combined with a little water or thin starch, or introduce it in the form of the aqueous extract of opium combined with cocoa-butter and made into a suppository, you will, in all probability, relieve the patient to a great extent of these distressing after effects, and moreover you will have applied your anodyne locally, at the point where the pain is, and where it is therefore most needed.

For two or three days after the abscess has been opened, the patient should be confined either to the bed or upon a lounge, in the recumbent posture, in order to give the parts absolute rest during that period of time.

As we are speaking of abscesses, which result in fistulæ, a very proper question presents itself at this point as to why such abscesses when left to themselves, do not heal up? Why, in other words, do they result so frequently in a fistulous tract? The answer I think is very simple. In the first place, we must remember that the abscess is situated in the

neighborhood of the sphincter muscles. These muscles are in a state of constant contraction; they are in a state of constant motion; motion which is conveyed to them during the act of inspiration and expiration. The result is, that the walls of the abscess are also constantly in motion. Then again the bowels are moving every day, and the parts are exposed to more or less disturbance in that way. In the third place, the vessels of the rectum are not very well supported, and the veins which convey the blood away from the rectum have no valves. As a result there is a constant tendency to the occurrence of congestion or stasis in these vessels, which is peculiarly unfavorable to healthy granulation in the cavity of the abscess. These I believe to be the principal reasons why an abscess here does not heal up as in other localities. It is true that it contracts down to a certain point like other abscesses, but that seems to be as far as it can go.

Now, let us take for illustration a case in which an abscess near the anus has been allowed to take its own course, one that has opened of itself, spontaneously, and has left a fistulous tract. If we introduce a probe into the external orifice, we find in the majority of cases, that we can pass it directly into the interior of the bowel. And we shall find also in the majority of cases, that its internal opening will be in that expanded portion of the rectum which is located between the internal and external sphincter muscles. This will constitute what we call a typical,

simple, complete fistula of the anus. In other cases when we come to pass the probe, we shall find that it passes up a certain distance toward the rectum but that it does not enter the cavity of the bowel. There is no communication between the upper portion of the cavity formed by the abscess and the interior of the gut. This will constitute what we speak of as an external fistula. It is an external fistula because it has an external opening; but it has no internal opening and therefore we speak of it as a *blind* external fistula. In other cases again we may find that there is no external opening whatever; but the patient has been complaining for a considerable time of pain immediately after having a movement of the bowel, and on investigation we discover an opening in the interior of the bowel, which at first sight resembles an ulcer—communicating with a deep cavity, and constituting what we call an internal fistula. But as there is no external opening whatever we designate it as a *blind* internal fistula.

In some cases of blind external fistula, when we pass the probe through the tract and introduce the finger into the rectum, we shall find that the two come pretty close together, apparently separated from each other by the thickness of the mucous membrane of the rectum only. There are cases in which the destructive process has broken down every thing in its way except the mucous membrane, which would ultimately succumb to the same process if the fistula were left for a sufficient length of time, since

I believe it is very unusual to see a case in which there has been an abscess with an external fistula for three months in which there is not also an opening communicating with the interior of the bowel.

If you ask me how the internal fistulæ are formed, I must answer that they occur, for the most part, in patients who either have, or are predisposed to, consumption from tubercular ulceration, or they occur in consequence, as I told you at the former lecture, of certain injuries to the interior of the bowel by the presence of foreign bodies, such as fish bones, etc., that have been swallowed, or injury depending upon constipated habits. A slight breach of surface takes place in this manner, and the next time a movement of the bowels occurs a little of the fæcal matter enters the opening. As it can not very easily get out again, from the dependent position of the opening, it proceeds to burrow its way onward. The next time a movement occurs a little more burrowing takes places, and as a result, there is formed at last a blind internal fistula.

The distinctions, however, into the *complete*, the *blind external* and the *blind internal* fistula, convenient as they are for many purposes, do not by any means cover the whole ground. A more scientific classification, in all probability, would be to divide them into, first, anal fistulæ, or those that occur low down as a result of very superficial abcesses; and secondly, into rectal fistulæ, or, as they are sometimes called, pelvic fistulæ, which have their internal open-

ing very high up, as represented in the diagram; not opening here, between the internal and external sphincters, but high up in the pelvis.

Let me say a word to you now about the method of examining a patient who comes to you with anal or rectal fistula. After putting him into position, examine the parts externally. If it is a complete fistula, you will find a small orifice; it may be very near the anus, or it may be at a considerable distance from it. In all probability it will be situated in the midst of indurated tissue and will be surrounded with a bluish margin. Now, take a probe very lightly between your thumb and finger, and pass it into the opening; carry it along without using any force, allowing it to take its own direction; in most cases it will pass at once into the interior of the gut. A very common mistake is made in examining these cases in introducing the finger into the rectum first; the effect of which is to distort the tract of the fistula, so that when you come to introduce the probe you will find it very difficult to appreciate the internal opening of the tract. Remember, then, to pass your probe first, carry it as far as possible, and lastly introduce your finger into the rectum. In the majority of cases, I say, you will find the probe already in the cavity of the bowel. In other cases, such as is represented in this plate, where you have a blind external fistula, you will pass the probe up to the extremity of the cavity and then introduce your finger into the rectum, and although there is no direct communication be-

tween the upper part of the fistula and the bowel, you will find, by moving the probe about, that at some point there is nothing but the mucous membrane of the rectum between your finger and the point of the probe. While your finger is in the rectum, having appreciated the end of the probe, and also the fact that in the majority of cases the internal opening is situated low down between the two sphincter muscles, let me advise you to examine higher up in the rectum at the same time, in order to appreciate the presence of strictures or malignant growths of various kinds upon which the fistulous orifice may depend. For instance, you will sometimes find in women who have syphilitic disease with stricture of the rectum, that there is a fistulous opening communicating with the outside parts, or possibly opening into the lower portion of the vagina, as I have often seen. If you regard such an opening simply as a recto-vaginal fistula, without making the higher examination, you may be led to operate upon it in ignorance of a stricture situated higher up in the rectum, when, of course, your operation will result in failure. Notwithstanding the necessity for this higher examination, I must still insist once more upon the fact that a majority of physicians, unless they have paid particular attention to rectal diseases, when they introduce the finger into the rectum to ascertain the locality of the internal opening, examine it entirely too high up, forgetting that in by far the greater number of cases it is situated within

an inch of the lower end of the bowel, as has already been stated.

Another important question presents itself for our consideration, viz.: As to the safety of leaving a fistula for any length of time without operating upon it, or without treating it. In certain cases of the blind external variety it is perfectly safe to delay for a time active interference, if more convenient for the patient, or if for any reason he can not subject himself to the treatment which is proper. But, on the other hand, if you have a fistula of the blind internal variety, there is no safety in delay. The longer such a fistula is left to itself the more burrowing will take place, the more collateral branches will be established in connection with it. The same is true with regard to those fistulæ which open higher up, resulting from abscess in the ischio-rectal fossa.

In many cases the patient will probably ask you also whether his fistula can be cured without resorting to the knife, or without a cutting operation. You will be obliged to decide this question somewhat according to the character of the individual. Thus, if he is a rich man, to whom time is of no importance, who is willing to undergo a process of treatment which will perhaps extend over a period of three or four months and perhaps cost him several hundreds of dollars, then you may say to him, if the fistula is of a very simple kind, with an opening low down, that, in all probability, if he will faithfully carry out your instructions, you can cure him with-

out an operation. If, on the other hand, he is a laboring man, to whom time is all-important, you may as well say at once, "I can not cure you without an operation."

To take the first case, that of the rich man who proposes to sacrifice the necessary time, how shall you proceed in order to fulfill your promise? In the first place it will be necessary to introduce into the fistulous tract a very small sponge or laminaria tent, and leave it there for eight or ten hours, until it is thoroughly expanded. On removing the tent you will wash out the sinus, and introduce into its deepest portions a pretty strong solution of carbolic acid, about one part to ten or twelve of water, which may be applied in one of two ways. First, wind the end of a flexible silver probe with absorbent cotton, dip that into the solution of carbolic acid and carry it down to the deepest portion of the tract, so as to touch every part of its walls. Or you may use this little instrument, which I prefer very much for these cases, and which consists of a small syringe composed of hard rubber, the barrel or cylinder of which holds about a drachm. The nozzle is nearly seven inches in length—very thin for about two inches of its distal extremity, which is also slightly curved and perforated with ten or twelve minute orifices. You can draw into the cavity of the syringe a little of the solution of carbolic acid, then wind the tip of the nozzle with absorbent cotton, as in the case of the probe; introduce the point thus pre-

pared to the bottom of the fistulous tract, when by pushing up the piston the fluid will pass out through the perforations in the tip of the instrument and saturate the cotton. Sometimes this is very much more certain in its action than the method by the probe. In the latter case, if the fistula is not thoroughly dilated, you will rub off most of the fluid before you get to the bottom of the cavity. With the syringe you pass the cotton in dry, and saturate it after it has reached its proper locality. The instrument was devised by Dr. Mundé, of this city, for making applications to the upper portion of the cavity of the uterus. I have found it very useful in treating fistulous tracts in connection with the rectum.

After applying the carbolic acid in this way it will be necessary for you to introduce into the cavity a small india-rubber drainage tube. After a few days you will find that the tube does not penetrate as deeply as at first. The effects of stimulating the surfaces with carbolic acid, combined with that of the drainage tube are, that at the bottom of the cavity granulations have made their appearance and are filling it up. Each day less and less of the drainage tube will enter the sinus, until finally the cavity is obliterated.

Another means of keeping the external orifice open, which is sometimes useful where it is difficult to keep the drainage tube in position, is, to take an ivory or bone shirt-stud with a hole drilled through

its shaft, introduce one of its extremities into the external orifice of the fistula, as you have seen Prof. Arnold establish a gastric fistula in the dog. The button will stay there indefinitely, because the orifice at this point is generally a little contracted; it is a little harder than it is just within, so that the shirt-stud is grasped and held in position. It seldom gives the patient any inconvenience, it allows the secretions to escape through the opening which has been made in it, and at the same time keeps the external orifice of the fistula thoroughly open. These studs are of all sizes and shapes, and can be made to suit all cases. Those which are flattened on both ends like a common shirt button are probably the best.

Finally, if the patient is very anxious to be spared an operation with the knife, you may, in carefully selected cases, operate by employing the elastic ligature. You may take a piece of rubber cord about one-tenth of an inch in diameter, pass it through the fistula, putting it thoroughly upon the stretch, and fasten it in such a way that it will exert constant pressure upon the soft parts included between the fistulous tract and the cavity of the rectum. How much pressure does such a piece of cord exert? I will take, for instance, a piece of elastic ligature of the size just mentioned, and six inches in length, the degree of pressure will depend entirely upon the amount of stretching to which it is subjected. Thus if it be stretched to its fullest capacity, which is in

the neighborhood of three feet, it will exert a pressure of about two pounds and a quarter. If you stretch it to the length of two feet it will exert a pressure of about one pound and a quarter. If you stretch it only one foot, or about twice its length, it will exert a pressure of only a quarter to half a pound. Recollect, however, that when such a ligature is applied as you see it represented in the plate, and fastened upon the stretch, although the pressure is not equal during the whole period of its operation, yet it is continuous from the moment of its application until every thing included in the loop is divided, being sufficient, from first to last, to cut through a considerable amount of tissue, and to do it thoroughly.

How long, you may ask, in the next place, does it take for an elastic ligature to cut its way through one of these fistulous tracts? The time required varies considerably, according to the amount of soft tissue which is to be divided. If there are three inches of flesh it will probably take from twelve to fourteen days. If you have a very superficial tract, simply coasting along under the skin, it will probably require from three to four days; and between these different degrees any where from six to ten. Six days is probably about the average period.

What, you may inquire, are the advantages and the disadvantages of the elastic ligature? The advantages are simply these: First, it enables you to treat the patient without a resort to the knife; secondly,

without any loss of blood—you may have cases of fistula in phthisical patients, in whom the loss of a little blood would be a serious matter; thirdly, the amount of pain suffered by the patient is, in the majority of cases, very slight; fourthly, the patient is enabled to attend to his business during the whole of the treatment. In a few exceptional cases the pain is excessive, but in the majority, as I just said, it is trifling.

The principal disadvantage of the operation is this: That in certain cases, where we suppose that we are dealing with a very superficial fistula and conclude to treat it by this means, we never know, until after this sinus has been divided, that there may not be other collateral channels opening into it, either from above or from the buttocks in a lateral direction. In the operation with the knife these would be discovered at once and treated at the time, in the manner to be described a little further on.

In speaking of the advantages of the elastic ligature I should have mentioned, also, that where we have one of the deep burrowing abscesses that passes up behind the sphincter muscles and opens into the bowel at a very high level, and on examining the bowel we find its posterior wall supplied with large vessels which we do not feel at liberty to divide with the knife, we can avail ourselves of this means with perfect safety so far as the danger of hemorrhage is concerned; indeed, without shedding a single drop of blood.

have, about three days previously, a thorough cathartic, in order to clear out the bowel. He should have another the night before the day of the operation, and then just before the operation the lower bowel should be well cleared by the use of a warm water injection. I speak of this particularly, because it happens frequently that unless this precaution is taken, just as the surgeon divides the fistula with the knife the patient has a movement of the bowel, and if it happen to be thin you can easily imagine the consequences to the operator. You will then put him in a position which is most convenient to yourself, viz., lying upon his side, close to the edge of the table, with his knees drawn up.

If you have a complete fistula to deal with you will pass a probe or grooved director carefully through the fistulous tract. You will next introduce your finger into the rectum until you appreciate the point of the probe. Then, if the internal orifice is near the verge of the anus, request the patient to make a straining effort, and in all probability you will be able to bring the point of the probe out of the anus. To complete the operation you will carry the knife along the probe and divide all of the intervening tissue, as it is represented in the plate.

If, on the other hand, you have a blind external fistula, you will pass the probe into it as far as possible, then introduce your finger into the rectum and appreciate that point at which the intervening tissue is thinnest between your finger on the one

side and the point of the probe on the other. By a little rotary motion of the probe you can now push its point through the tissue until it comes in contact with the finger, converting the blind external fistula into a complete fistula. Finally incise it, as in the other case; divide all of the intervening parts.

If you are treating a blind internal fistula, such as is represented in this plate, take a flexible silver probe, bend it into the form of a shepherd's crook and introduce it into the rectum. Now feel about with the bent point until it engages in the orifice of the fistula. The patient's sensations will aid you very much in finding it. As soon as the point strikes the orifice of the fistula he will complain of pain, and you will find that by drawing the probe in the supposed direction of the fistula, and by pressing externally with the point of your finger, making a kind of conjoined manipulation, in this manner, you will get the probe and your finger pretty nearly in contact with each other, with perhaps only the skin and a little tissue intervening. Then push a narrow bistoury through from without until it strikes the point of the probe, and thus convert the internal blind fistula into a complete fistula. Finally divide all of the intervening tissue with the bistoury as before. If you find in any of these operations that there are secondary sinuses running into the one which you have opened, by all means slit them up at the same time. If you fail to do so a part of the incision will heal up and another part of it will not.

Follow out, then, with your probe all of these collateral sinuses or tracts, and slit them up into the one which you have originally made. Finally, pack the bottom of the wound with soft dry cotton, so as to prevent the superficial parts of it from healing until the deeper portions are well filled with healthy granulations.

Another very important point in the treatment of these sinuses is, to trim off all blue, unhealthy looking tissue which surrounds the margin of the fistula externally. The skin in this locality is generally unhealthy, badly nourished, and unless trimmed off with the scissors it will curl down into the wound and interfere materially with the healing process.

Still another practical point in the same connection is this: After you have opened some of these fistulous tracts you will find, as I told you the other day, that the bottom of the tract is hard, indurated and dense. In all such cases, in order to facilitate the healing process, let me recommend you to take a straight bistoury and draw it through the bottom of the fistula so as to divide the indurated tissue; it will granulate and heal up in half the time for so doing. This method was practiced many years ago by Dr. Salmon, who called it his "back cut," and he was in the habit of saying, after he had divided a fistulous tract like this, "Now, I have made a fissure, I shall proceed to cure it," and he then drew his knife along the base of the sinus so as to entirely divide the external sphincter.

I am sure that in many such instances this practice is the best that can be adopted. This *reverse* incision, in cases of long standing, in which the walls of the sinus are but little disposed to granulate, tends to set up a healing action from the bottom of the wound, and to facilitate the cure. If it is neglected, many of these cases will not heal up, but will pass into the condition of a fissure, in which the patient will suffer more or less pain after, as well as at the time of, defecation.

I have already spoken of packing the bottom of the wound with cotton after the operation, and while this is important in all cases as a means of compelling the wound to heal properly, it is doubly so in those in which the fistula extends a long distance up the gut, in which bloodvessels of considerable size are necessarily divided. Unless this precaution is taken you will probably be called up in the night to investigate this darksome passage, on account of hemorrhage, under very unfavorable circumstances. If after dividing the fistula you see a large vessel pumping blood, the safest method is to pick it up with the artery forceps and either submit it to torsion or control it by means of a ligature. The lesser varieties of hemorrhage, however, you can control by packing the wound thoroughly with cotton as I have directed, and afterwards applying a compress and a T bandage.

Another question which comes up for our consideration is whether in dividing a fistula which reaches

up some distance, involving both sphincter muscles, the incision will cause incontinence of wind or feces. A great many patients, ladies especially, if they understood that such an operation, while it relieved the fistula, would also deprive them of the voluntary control of the bowel, would never have it done. They would prefer to bear any amount of suffering incident to the fistula rather than be reduced to a condition in which they would not only be an object of disgust to themselves but also an object to be shunned and avoided by all decent society. You will be obliged, then, to decide this question, and especially for those who have a fistula opening high up, above the internal sphincter. As a rule, if the fistula is straight, so that the sphincters require to be divided in one place only, and that at right angles to the direction of their fibers, in all probability there will be no incontinence. The divided muscles will grow together. If, on the other hand, the fistula is of a double character; if it runs clear around the circumference of the anus in the form of a horse-shoe, so that you are obliged to divide the sphincters on two sides, or if you are obliged to divide their fibers very obliquely, I think you can pretty safely say that until some other operation is done subsequently the patient will have more or less inability to control the passage of wind and liquid feces.

Again, if you can manage to leave a few of the fibers of the upper border of the internal

sphincter undivided, this danger will be very much lessened.

After an operation for fistula the bowels should be confined for about three days by giving an astringent dose of opium, preferably by the rectum, for the same reason and in the same manner as after opening an abscess in this region. At the end of three days the bowels should be opened by giving some mild laxative which will induce a soft, consistent movement. The prescription which I generally use for this purpose consists of equal parts of sulphate of magnesia, carbonate of magnesia, precipitated sulphur and the bitartrate of potash, rubbed together in a mortar and given in the dose of one or two teaspoonfuls mixed with water or syrup in the morning before eating. If there is any difficulty at the beginning of the movement advise the patient to restrain it until he can inject into the bowel a quantity of thin flaxseed tea, which I very much prefer in such cases to the common injection of soap and water. The laxative mixture which I have recommended can be given day after day during the healing process, if there is any tendency to constipation, until the bowels become naturally regular.

If the wound heals slowly resort to a stimulating lotion, such as I have suggested to you in the treatment of the cavity of the abscess; the sulphate of copper, sulphate of zinc, carbolic acid, weak solutions of nitric acid, the balsams, etc. In persons of feeble constitution the wound is sometimes very slow in healing

and remains an obstinate, indolent sore. If careful attention to cleanliness, stimulation, etc., fails to bring about a healthy action, resort should be had to constitutional remedies, such as cod liver oil, iron, and quinine, with generous diet; and, in some cases, a removal to the country or seaside may induce the desired result.

LECTURE III.

HEMORRHOIDS.

GENTLEMEN: By hemorrhoids, or piles, the subject which I have selected for our study this morning, we understand a morbid condition of the blood-vessels of the anus and the lower portion of the rectum, especially of the veins which are situated in the submucous and the subcutaneous areolar tissue of these parts. These veins communicate with one another by a series of loops which form a sort of plexus surrounding the lower portion of the rectum and just within the internal sphincter. Before describing to you, however, exactly what this morbid condition is, let me remind you in passing, that the blood in this plexus of veins finds its way into the general circulation by two distinct channels. The greater portion of it is carried by the superior hemorrhoidal veins into the inferior mesenteric vein, and from thence into the vena porta; the smaller portion is carried by two veins which accompany the inferior and the middle hemorrhoidal arteries, emptying into the internal iliac vein. I beg you to bear this anatomical fact carefully in mind, since it has a very important bearing upon the etiology of the

disease we are considering, and because I shall have occasion to refer to it again a little further on.

Surgeons are in the habit of classifying piles, or hemorrhoids, as *open* piles when they bleed, and as *blind* piles when they do not. Please remember the distinction. Another classification is this, that when the vessels which are situated underneath the mucous membrane of the rectum above the external sphincter muscle are alone involved in the disease, the piles are said to be internal. When the vessels which are distributed underneath the integument outside of the external sphincter alone are involved, they are said to be external.

Now, put these two classifications together; a blind pile is generally an external pile; an open pile is generally an internal pile, as we shall see further along.

Then we have a third variety, which is called by some others *intero-external*, in which the tumor or tumors are composed partly of internal piles and partly of external piles, and in point of fact we very often find in general practice these two varieties existing in the same subject.

Of external piles there are practically two varieties: first, we have what is designated as the sanguineous or bloody tumor; secondly, an excrescence of skin, or a cutaneous growth at the verge of the anus. Remember these two varieties of external piles; it will facilitate your understanding of the matter very much if you keep the classification care-

fully in mind as we proceed. The first of these, or the sanguineous tumor, consists of an elevation of skin usually at the side of the anus. It is generally of a bluish or livid color—not quite so red as is represented in the plate, except after it has become inflamed. If we open such a tumor we find it to consist internally of a dark coagalum inclosed in a cyst. This cyst may be formed out of the dilated walls of the vein, which has produced the hemorrhoid, surrounded on all sides by a layer of plastic lymph which has been poured out in consequence of inflammatory action, and has shut off the coagulum from the general circulation. Or, what is probably more often true, it consists of an adventitious cyst, which is composed, in the same manner, of a layer of plastic material which has been thrown out around a quantity of blood that has been extravasated into the areolar tissue in consequence of the rupture of the walls of the vein. Whichever theory is correct does not matter materially, since the presence of a clot in either case is the most important thing for us to remember.

The second variety of external piles consists of a prolongation, or, as it is called very frequently, a tag of skin situated at the side of the anus, and which is almost always the chronic result of the first variety which I have just described, and dependent upon a hypertrophied condition of the cutaneous layers in this locality; or, to state it more clearly, it is what remains after the clot in the first form of external

hemorrhoids has been absorbed. It is *almost* always the chronic result of the first variety for this reason: we sometimes find that such a cutaneous excrescence develops independently of the formation of any clot, and whenever it does so it is to be found in cases in which there is an irritating discharge from the rectum, depending perhaps upon congestion of the whole mucous membrane of the rectum, such as obtains in dysentery and chronic diarrhœa, in cases of fistula and fissure in stricture of the rectum, or when there is malignant disease higher up. But as a rule, recollect, these cutaneous excrescences are the chronic result of the other form.

The first variety of external hemorrhoids, such as you see in this plate, is generally a single tumor situated at the side of the anus. It varies in size from that of a small pea up to the size of an English walnut. Occasionally we find them in the multiple form, as is shown in this plate, where you see two or three of these little tumors projecting at the side of the anus.

The internal pile differs essentially from the preceding in its structure. It is found to consist, almost invariably, of a congeries of bloodvessels, in which there are arteries, capillaries, and veins grouped together, and very much resembling another pathological condition of the bloodvessels, which we designate as "aneurism by anastomosis." It differs, however, from that condition in this important respect, that in all of these

internal piles the venous trunks predominate over the arterial, not only as to their size and number, but also as to their varicose disposition. The walls of the vessels in the internal pile ultimately become diseased in almost every case; sometimes they become indurated or thickened; sometimes attenuated, either alone or in conjunction with softening, induration or ulceration, hence, such tumors are not unfrequently the seat of hemorrhage both venous and arterial. The internal pile is always situated above the verge of the anus (except when protruded by efforts at defecation) and usually just above the level of the internal sphincter.

There are also of these two principal varieties. First, we have what is called the longitudinal pile; secondly, the globular pile. The longitudinal internal hemorrhoid, as its name indicates, is generally placed with its long axis corresponding to the long axis of the bowel itself, and if you look at it you will see that it resembles very closely a large leech attached to the wall of the intestine. The largest portion of it or the base, is generally downward, attached by a broad surface to the wall of the intestine, and running up a certain distance to terminate in a rather thin point, or apex. It is usually of a dusky color, smooth, firm, elastic to the touch, varies greatly in size and seldom bleeds.

The globular internal pile constitutes what is generally meant by the bleeding pile. It is commonly attached to the interior of the bowel by a broad

We may safely say, then, that any thing that produces or tends to produce congestion of the hemorrhoidal plexus, whether it be an obstructed liver, constipation, pelvic tumors, pregnancy, tight-lacing, assuming constantly the upright position, sedentary habits, indolent, lazy habits of life, want of exercise, every thing indeed of this kind, predisposes to an attack of hemorrhoids.

Among the exciting causes may be mentioned—first, any thing which produces local irritation about the anus or rectum, such as pruritus, or itching of the anus, which I shall also have occasion to speak about further along in the course; the use of drastic purgatives which irritate the bowels, and after a while produce congestion of the hemorrhoidal veins; horseback exercise; urethral and prostatic disease of all kinds; over-indulgence in sexual intercourse; the presence of other diseases in the neighborhood, such as fissure, fistula, constriction or stricture of the bowel, malignant disease, and so on.

Now let me say something to you about the symptoms of piles; and we shall have to discuss this part of our subject according to the classification which we have made. We will consider first the symptoms of external piles. The external pile, when not inflamed, is accompanied by scarcely any special symptoms. The only annoyance to which it subjects the patient is the mere fact of its presence. He sometimes feels it on sitting down, in cleaning himself after having had a movement of the bowel,

Among the predisposing causes of hemorrhoids may be mentioned,—first, the peculiar arrangement of the veins at the lower end of the rectum to which allusion has already been made; secondly, the fact that these veins have no valves; thirdly, their dependent position in the bowel; fourthly, their peculiar method of communication with the portal circulation, and the very decided tendency there is from all of these causes for congestion to take place in the hemorrhoidal plexus. Indeed, I may say to you that were it not for the anatomical arrangement, to which I alluded in the beginning of the lecture, for a part of the blood of the hemorrhoidal veins to find its way out through two small veins which accompany the inferior and the middle hemorrhoidal arteries, emptying into the internal iliac vein, we should probably find that hemorrhoids or piles would occur much more commonly than they do, in consequence of the very frequent disturbances of the portal circulation occurring as a result of certain diseases of the liver, of constipation, of over-indulgence in hearty food, etc., etc., in all of which cases the plexus of hemorrhoidal veins would otherwise be obliged to bear the whole weight of the column of blood in the portal vein. It would seem, therefore, that this arrangement of the veins emptying into the internal iliac vein is a special provision of nature, by which a portion of the blood in these vessels can empty itself under certain conditions where the portal circulation is obstructed.

If he sits down squarely the tumor will be in the way and gives him a great deal of pain. If he sits upon one side then the buttock presses upon the tumor, and that gives him pain; if he lies down he is just about as miserable as before; if he stands up he finds that the erect position, and especially exercise in the erect posture materially aggravates his suffering, and so he goes wandering about from one place to another endeavoring to find some position in which he can be comfortable, constantly thinking of his rectum, and wholly incapacitated to do business, although the tumor may not be larger than the end of your little finger.

You may ask me in this connection what is the natural termination of such a tumor—an inflamed external hemorrhoid? It may terminate in several different ways. First, by complete resolution or subsidence, though that is not the rule. Secondly, the little clot of blood which is formed in the wall of the dilated veins, or in the surrounding tissues, may become organized, when it will leave a small tumor for the remainder of the patient's life, unless it be removed by the surgeon. Again the inflammation of such a tumor may be of such a grade as to produce suppuration in the cyst or sac of the clot. A little abscess will form, break, and discharge a small quantity of very fetid matter, which will be mingled more or less with coagula, the remains of the broken down clot, which originally existed in the cyst. When this takes place the cavity of the ab-

scess will sometimes heal up very kindly; at other times it will leave a very superficial fistula, not such a one as I described to you at my last lecture, but one which runs superficially, having for its outer wall only a part of the thickness of the integument, and opening below the external sphincter muscle just within the puckered margin of the anus. The treatment for this variety of hemorrhoids resolves itself, first, into constitutional treatment, and secondly, into local. And let me assure you that that man will be most successful in the treatment of hemorrhoids who regards the disease not wholly as a local disorder, but who always takes into consideration the fact that it usually depends upon some constitutional disturbance as its primary cause; some failure to attend to the ordinary laws of health, resulting in a disturbed state of the portal circulation.

The constitutional treatment, then, will vary considerably according as you have a very feeble, weak subject to deal with on the one hand, or a plethoric subject on the other. If you find such a tumor as this in a debilitated subject, a person who is very much run down in health, whose tissues are all in a relaxed condition, you will probably find it necessary to put him upon a suitable course of tonics to begin with. He will probably need preparations of iron and Peruvian bark, and possibly cod-liver oil. In addition to this he will need something for his sphincter muscles and the lower portion of his rec-

tum, as they are often in a relaxed condition and have a tendency to protrude every time he goes to stool. I say you will be obliged to give such a patient, in addition to the general tonic treatment which I have indicated, some kind of medicine which will act as a local stimulant to the parts. And for this purpose there is probably nothing better than a mixture of equal parts of the confection of black pepper, the confection of senna and the confection of sulphur. These three preparations of the pharmacopœia can be rubbed down into a semi-liquid mass with a little honey or treacle, and administered to the patient in the dose of one or two teaspoonfuls every morning before eating. And if he be of a very constipated habit perhaps it will be found necessary to repeat the dose at bed time as well. The object of the confection of senna and sulphur in this case is to act as a gentle laxative, since it does not do to give these patients drastic purgatives. You need a laxative which will give them a soft, consistent, comfortable movement of the bowels once a day. The object of introducing into the mixture the confection of black pepper is simply this: Black pepper is a substance which, when swallowed, passes through the alimentary canal unchanged, and it produces a local, stimulating effect upon the lower part of the rectum. I suppose a good many of you have experienced this fact in the course of your lives, not only with black pepper, but with capsicum; the next morning after eating a dish of raw oysters, seasoned

with either of these substances, a smarting, burning sensation exists about the rectum. Both of these substances then probably pass through the alimentary canal unchanged.

Now, when you come to deal with a plethoric patient in the same condition, your treatment will differ. Suppose you have a large, heavily made man of a plethoric habit; a man who is in the habit of eating largely three or four times a day; takes freely of animal food; washes it down with a generous glass of wine, perhaps with two or three, and then after he has finished his meal indulges in three or four strong cigars, and smokes cigarettes the remainder of the day. In such a patient you will find there is a congested state of the portal circulation upon which these external hemorrhoids probably depend. Instead of putting him upon tonics, as you did the other man, you will be obliged to change his habits of life altogether. You must insist upon a reduction of his diet in the first place; he must take less animal food, and live largely upon fresh vegetables and starchy material, terminating his meal, if he need something more, with succulent fruits—such as oranges, bananas, grapes and berries, every thing of that kind in their season.

Then, in the way of medicinal treatment, there is nothing better for such patients than to take every day a certain quantity of some one of the cathartic or laxative mineral waters; something that will give them one or two free and easy, semi-consistent

movements of the bowels daily. Of these waters the best are the Friedrichshall, the Carlsbad, the Pullna, the Hunyadi-Janos, and some others. Of these my preference is for the Hunyadi-Janos, which can be administered in the morning, in the dose of a large wineglassful. This with most patients will insure one or two movements. With some patients these mineral waters do not seem to answer the purpose. In that case I would recommend that preparation which I instructed you to give in certain conditions of fistula, consisting of equal parts of the carbonate and sulphate of magnesia, precipitated sulphur and the bitartrate of potassa, rubbed together in the form of a powder and given in doses of one, two, or three teaspoonfuls in sweetened water, or in syrup, in the morning. In most of these cases of external hemorrhoids the best local treatment consists in removal. But you will very often find patients who will not consent to an operation, and you will be obliged to resort to some means which will relieve their suffering. In such cases I do not know of any thing better than to smear the parts over very thoroughly with a mixture of equal parts of the extract of belladonna and aqueous extract of opium, rubbed down into the form of a fluid with a little glycerine. This should be followed by a warm poultice pretty well saturated with the tincture of opium. He should be put in bed with his head low and two pillows put under his hips so as to elevate the pelvis and give the blood an opportunity to pass out of the

hemorrhoidal veins in accordance to the laws of gravitation. In a few cases you will find that the application of a bag of ice will give more relief than the warm poultice. The ice bag should be applied for the matter of ten or fifteen minutes; then taken away for an equal length of time, using it intermittently in this way until he obtains relief.

If the patient will submit to an operation, the best treatment for a case of inflamed external piles is to take the little tumor between your thumb and finger, pass a curved, sharp-pointed bistoury down into the base of the tumor and then cut your way out, following up the incision by a little compression. The clot will gush out, the walls of the tumor will collapse, and the patient will be almost immediately relieved—or as soon as the smarting incident to the cut has subsided. You may ask me if this is not dangerous? I answer, no. I have done it a great many times in the course of my life, and I believe it is the best treatment for an inflamed external hemorrhoid of this variety where there is evidently a clot. There is very little danger of hemorrhage for the reason which I have already given you. That the clot is inclosed in a cyst which is formed of plastic material, and which shuts it off from the general circulation. Even if there be a little hemorrhage it is situated where it can be very easily controlled by pressure, or by an astringent, such as the sub-sulphate of iron or a bit of styptic cotton. After this operation there may be a couple of little cuta-

neous flabby tags about the verge of the anus; if these prove troublesome, at some future period they should be taken up with a pair of dressing forceps and snipped off down to the level of the surrounding skin with the scissors. I believe it is good practice to remove them in this way even when they give no trouble, because so long as they remain there they are very apt to form the starting point for a fresh attack of hemorrhoids at any time. You will understand, then, that in the treatment of external hemorrhoids like these, the best method of dealing with them in their inflamed state is to incise them and turn out the clot. If they are not inflamed and the patient desires to get rid of them, then the best means is to pick them up in a pair of mouse tooth forceps, or some other convenient instrument, and snip them off with the scissors. They do not require to be tied, as is the case with internal hemorrhoids, for the reason that I have just given. The operation leaves but a very small wound which heals in a few days and leaves the parts in a perfectly sound condition.

Let us notice now, for a moment, the symptoms of internal hemorrhoids. When not in an inflamed condition they do not give rise to any symptoms whatever, except that the patient may be annoyed occasionally by a sense of itching about the parts. He may have a little more than the natural desire to strain when he has a movement of the bowels. There may be, at times, a sense of burn-

ing high up in the gut, or some trifling symptoms of that kind. When they become inflamed, however, then they are the seat of an intense burning, pricking, lancinating pain, and they almost invariably give rise to a sense of some foreign body in the rectum, as though he had a portion of hardened feces there which could not be expelled. In order to relieve this feeling, he will go repeatedly to the closet and sit there perhaps for an hour, making constant straining efforts. Of course, every time he indulges himself in this way he aggravates the disease by increasing the congestion in the vessels, until after awhile the tenesmus will become so intense that he will force the piles outside the sphincter muscles, as you see it represented in this plate. This lighter colored line, which you see here, is intended to represent the everted mucous membrane of the rectum; these ragged masses which are shown here, are intended to represent a number of internal piles after they have come down outside the sphincter muscle. Here another source of suffering begins. The piles being outside of the sphincter muscle, the muscle is irritated; it contracts spasmodically, and it strangulates the piles. As a result, a higher grade of inflammation ensues, with a proportional increase of pain. This is the ordinary history, but in other cases perhaps the first symptom which the patient notices is the occurrence of a slight hemorrhage. He may find that after having had a stool, there are three or four drops of blood passing out of his rectum, and

soiling his clothes. At other times, if the patient is a careful observing man, when he has had his stool he will examine it as the dogs do, and he will discover that along one side of it there is a streak of blood; as the case progresses and becomes a little more chronic, the flow increases so that every time he has a movement of the bowels he will pass a certain quantity of blood, varying from a tablespoonful to a number of ounces, until in an aggravated case the patient will lose so much blood every day that he becomes anemic—his face will be pale, the lips and conjunctiva bloodless; he will be troubled with ringing in the ears, palpitation of the heart, passive swelling or dropsy of the feet and lower extremities, with all the other evidences of a depreciated condition of the blood.

As to the treatment of internal piles, which is perhaps the most important part of our subject, in addition to the constitutional means I have described to you as proper in all cases, when internal piles protrude, they should be subjected, every time the patient has a movement, to free sponging with cold water, and he should be instructed to return them as soon as possible in order to obviate that additional congestion which takes place from the constriction of the sphincter muscle. In some cases, also, where the patient does not care to submit himself to an operation, and the bleeding is of such a character as to occasion alarm, you can do very much by introducing into the bowel, every night, some kind of an

astringent injection. You can use for this purpose a solution of one grain of the sulphate of iron to the ounce of water; inject of this about two ounces and leave it in the rectum all night. After a few trials the rectum will become accustomed to this quantity of fluid, so that he will not have a desire to pass it away. Or, if you please, you can use a solution of the muriated tincture of iron, about ten drops to the ounce of water. What I prefer, however, as being more comfortable to the patient from the fact that it does not in any degree distend the rectum, and because I believe it to be more effectual, is to introduce, by means of the syringe, which I showed you the other day, an ointment composed as follows: ℞. Compound ointment of nut galls, one ounce; aqueous extract of opium, one scruple; solution of sulphate of iron, one drachm; mix and make an ointment. If the syringe is not at hand the patient can be instructed to introduce it into the rectum by means of his finger. You will in that way overcome in a measure the tendency to hemorrhage, and will carry your patient along until his health has been sufficiently restored to enable him to bear an operation.

When we come to speak of the surgical treatment of piles, we find that it resolves itself into three principal methods, viz., first, excision; second, ligation; and third, the treatment by the application of cauterizing subtances. Let me say to you, then, that it is a good rule in surgery to excise all

external piles, whether they consist of sanguineous tumors or of excrescences of the skin at the margin of the anus. It is also as good a rule not to excise internal piles for the reason that they are very much more vascular, are liable to be followed by furious hemorrhage, and are situated in such a locality that you can not always control the flow of blood. Patients have died in consequence of being operated upon in this way. When you excise an external pile it is a very simple matter indeed. You pick it up in a pair of forceps, lift it away from the skin to which it is attached, and snip it off with a pair of curved scissors. If there is any hemorrhage, lay over it a little pad of styptic cotton, or a piece of cotton dipped into a solution of the subsulphate of iron, and retain it there with a compress and a T bandage. That will effectually control all dangerous bleeding. Of course if there be an artery spouting blood you will take hold of it with a pair of artery forceps and twist it, or tie it. An instrument which is very useful for picking up these external hemorrhoids is a toothed forceps which was devised by Prof. Thomas, of this city, for certain operations about the vagina and perineum. The pile should be cut off at the level of its attachment to the skin, not going too deeply, lest you leave a large wound, to be followed by contraction and consequent narrowing of the outlet of the bowel.

LECTURE IV.

HEMORRHOIDS—CONTINUED.

GENTLEMEN:—We had completed at our meeting of last week the subject of external hemorrhoids, and had noticed the general symptoms together with the constitutional and local medical treatment of the internal variety. At the close of the lecture I stated that whenever internal piles were protruded during the straining efforts at stool, they were very apt to become constricted or strangulated by the sphincter muscle, and that as a necessary consequence they were very likely also to take on inflammatory action, which not only added materially to the sufferings of the patient, but which by its frequent repetition induced a relaxed state of the lower portion of the gut, especially of the sphincter muscles, strongly favoring a recurrence of the accident with each successive movement of the bowel. To obviate this difficulty the patient should be instructed to return the prolapsed mucous membrane together with the piles as soon as possible after each evacuation, by first thoroughly cleansing the parts and constringing them, at the same time, by a liberal use

of cold water; anointing them with some oily substance, like vaseline, cocoa butter, sweet oil or lard, and either with the fingers alone or covered by a napkin, pressing them back within the sphincter. The means of relief to which I have now alluded, together with those which I mentioned at the last lecture under the head of the constitutional and local medical means for treating internal piles, are, however, to be regarded only as a palliative in their nature, and not as a permanent cure, for I believe, with very rare exceptions, an aggravated case of internal piles will not get well under any treatment short of a surgical operation.

Before discussing this part of our subject, however, it may be right to stop a moment and inquire whether it is ever proper to operate upon internal piles which are strangulated or in an inflamed state. The majority of surgeons adopt the rule never to operate under these conditions, fearing unhealthy inflammation, erysipelas, pyemia, and so on, contenting themselves usually with the application of a few leeches around the margin of the anus, and the use of the ice bag, to which I have already alluded, the application of heat, warm poultices rendered anodyne by the addition of opium in some form, or by the use of a poppy fomentation for a few hours, and then making another attempt at reduction. I speak of this particularly because you will meet with cases of internal piles now and then that are protruded and strangulated by the spasmodic contrac-

tion of the sphincter muscles, so that it is very difficult to reduce them. In all such cases I would advise you to persuade the patient, if possible, to submit himself at once to an operation, since if left for any considerable length of time in this condition sphacelus or sloughing will be very likely to occur. You may ask me what harm if sloughing does take place? I answer that in all probability it will result in a radical cure of the piles, but it will be a long process; it will subject the patient to a long confinement to the house, and to an unnecessary amount of pain.

We come now to consider the surgical treatment of internal piles. And we find that there are no less than eight different methods which have found favor with different operators from time to time. First; we have the operation by excision. Secondly; by ligature. Thirdly; by the application of various caustics and acids. Fourthly; by the use of the clamp and the scissors, and the subsequent application of the actual cautery to arrest the hemorrhage. Fifthly: dilatation of the sphincter muscles. Sixthly; the use of the écraseur of Chassaignac, or, what amounts practically to the same thing, the wire of Maisonneuve. Seventhly; by the use of the galvano-caustic wire. Eighthly; by the injection of carbolic acid, and various other astringents.

Before discussing these various modes of treatment, however, let me say something to you as to the preliminary treatment of a patient who has to

undergo an operation for internal piles. I do not think that we ought to operate on a case of this kind without certain preliminary treatment, which should consist in administering every day or two for a week before the operation is to take place, some kind of a cathartic which will keep the bowels thoroughly cleared out; which will unload the portal circulation and put the rectum in the best possible condition to recover after the operation has been done. The day before the operation the patient should have his last dose of cathartic medicine so that it will operate thoroughly on the morning of the day upon which the operation is to be performed. Say you give the cathartic dose at bed time, it will, probably, operate about eight or nine o'clock in the morning. Then appoint the operation for, perhaps, two o'clock of the same afternoon, and about an hour before the expected arrival of the surgeon the patient should take a large warm water injection, in order to cleanse the lower portion of the rectum. When this is voided it will be desirable to have the patient sit for some time over a vessel containing warm water, and occasionally making a straining effort in order to extrude his piles as far as possible, thus bringing them within easy reach of the surgeon's instruments.

As to the operation by excision. I told you the other day, that in the majority of cases, it was only applicable to external hemorrhoids; that in such cases there was not very much danger of hemor

rhage, because, in consequence of inflammatory materials thrown out around the tumor it was shut off from the general circulation. There are, however, certain exceptions to this rule in which excision is alike applicable to internal piles. These are cases in which the piles are small, few in number, and are situated pretty low down, within easy reach, provided certain precautions are taken. If you simply cut them off with the scissors you will probably have hemorrhage. For instance, take the case of a child-bearing woman who has only one internal pile situated at the perineal side of the anus; such a one can be safely treated by excision, although it belongs to the internal variety. In order to do it safely, however, you must take it up at its base with some kind of an instrument which will hold it securely while you are engaged in preventing the hemorrhage. For instance the Smith's clamp, or the circumcision clamp of Dr. Henry. Pinch the pedicle together and then snip off the redundant portion with the curved scissors; then hold on to it with the clamp until you have succeeded in taking up the vessels (usually not more than two in an ordinary sized pile) with the artery forceps, and subjected them to torsion. Finally I would advise you to pack over the surface where you have operated a large piece of absorbent cotton to which is attached a piece of twine to facilitate its removal. The cotton should first be saturated with a very strong solution of tannic acid (one ounce of tannin to one ounce of water).

This method of operating has certain advantages over others which I will describe to you presently, for the reason that you do not have to wait a number of days for the ligature to come away in the one case; nor for the eschar to separate as in the case of the clamp and the actual cautery, or by the use of the caustic acids of which I have spoken. Remember, however, that you are not to excise these internal piles unless these precautions against hemorrhages are taken, first twisting all the vessels before you let go of the stump, and then packing the cut surface with cotton soaked in a styptic solution of some kind, either of tannin, alum, or if you prefer, the subsulphate of iron.

You may ask me how you can get at internal piles to do this operation where the patient is unable to extrude them by straining efforts? I answer that the first step in the operation will consist in introducing your thumbs into the patient's anus, and stretching the sphincters very thoroughly, the patient meanwhile being under an anæsthetic, first from before backward and then in a lateral direction, until you have succeeded in overcoming their contraction. You can then introduce without any difficulty whatever, two or three of your fingers, and if need be, most of your hand. When thoroughly done the lower three or four inches of the rectum is perfectly accessible. Especially if you have your patient in a good light, the parts well cleansed by water, and held apart by a pair of retractors.

Next we come to speak of the ligature, one of our best means of operating, by the way, and in discussing its use I do not intend to convey the idea that you are to pick up all internal piles, of whatever size their pedicles, and surround them just as they are with a strong ligature. On the contrary, I would recommend for those with a broad pedicle, the operation by the ligature as combined with that of incision. To make this point clear, if you take up an internal pile which is low down in the rectum, and which is covered on one of its sides with a kind of tissue which is intermediate between skin and mucous membrane, and surround such a pedicle with a ligature, the patient will probably suffer the most terible agony for the next forty-eight hours, and you will find that the pile will not slough off in less than eight or ten days. During the whole of that time the patient will be in more or less pain, and he will be very likely also to have considerable fever in consequence of irritation brought to bear upon the lower portion of his rectum, simply because you have not applied the ligature in the best way. I recommend to you, therefore, in treating internal hemorrhoids with the ligature, always to combine it if possible, with incision. That is to say, to take up the pile by means of this instrument, which is known as the vulsellum forceps, lift it out from its connections, and then with a strong pair of curved blunt scissors like these, divide the attachment of the pile to the surrounding parts. If you ask me where the division

shall be made, I answer just in the little faint white line which indicates the junction of the mucous membrane of the rectum with the integument outside. The operation is perfectly safe, since you must remember that the vessels which supply the pile all come from the upper part of the rectum, and are distributed from above downward, in the form of loops, so that while you run no risk in making the incision, you provide a place in which to lodge the ligature and avoid the disadvantage of increasing the pain by tying in with the base of the pile a large portion of muco-cutaneous tissue which is always very sensitive. In other words, the object of the incision is to free the root of the pile as much as possible from the skin of the mucous membrane, leaving it covered on its upper surface only by a narrow isthmus of mucous membrane. After making the incision the assistant who is holding the pile with the vulsellum forceps will lift it out at right angles to the wall of the gut, thus opening a deep furrow in which to lodge the ligature. Now, if you will remember to carry out this treatment in the management of all the more aggravated varieties of internal piles, those of large size, viz., which you do not dare to treat by the other method; and remember also before leaving the patient to introduce your fingers and thoroughly stretch the sphincter muscles, your patients will suffer very little pain after three or four hours from the time of the operation. Why? because, as I believe, the pain of a hemorrhoid,

whether in its simple inflamed state or after the operation, is due mainly to the spasmodic contraction of the sphincter muscles which occurs in consequence of the irritation, and by stretching them, this source of suffering will be obviated.

Having made the incision around the base of the pile in this manner, you will take a very strong but fine ligature, fine braided silk being the best; the ligature should be thoroughly waxed, in order to increase its strength and prevent slipping; then tie the ligature as tightly as possible in a square knot, first the right end of the ligature over the left, and then the left end over the right. And, inasmuch as you may possibly make a mistake in the second part of the knot, it is always safer to make a third knot.

After you have tied the piles, cut off the ends of the ligature within half an inch of the knot, and return the parts thoroughly within the anus above the sphincter muscle. Then take a thick wad of absorbent cotton, oil it, place it directly over the anus, and confine it with a T bandage, the object being to produce a certain amount of pressure directly upon the anus. You will find that this pressure will relieve the pain after the operation, and it will prevent very considerably the tendency which the patient always has to strain or bear down, and in that way force the piles again outside of the sphincter muscle.

In the third place, we come to speak of the treatment of internal piles by caustics and acids; and let

me say to you that there are only a few varieties of piles that should be treated in this way. At one period in the history of medicine an attempt was made to treat all cases by the application of violent caustics, such as nitric acid, chromic acid, and acid nitrate of mercury, and so on, but it was found to result in failure, except in a few carefully selected cases, such as I will now describe to you. The cases then in which you may use nitric acid, which is the caustic that I prefer, if I use any, are those which I described to you a few days ago under the name of *granular piles;* piles in which a certain amount of superficial ulceration has taken place, somewhat flattened in their shape, having a granular surface, looking like the outside of a raspberry or mulberry, very thin, attached by a broad base so as to make it very difficult to include them in a ligature, or to treat them by excision.

How shall you proceed if you are to use nitric acid upon one of these piles? First, get the patient to force it outside of the anus, if possible; if not, dilate the sphincter muscles thoroughly, and use the retractors or a speculum of some kind, which will enable you to get a perfectly good view of the attachment of the pile. Then take a little wisp of absorbent cotton, draw it out and twist it up into a kind of a rope, saturate it with a strong solution of carbonate of soda, or any alkali that you please, so it is not caustic in its character; then lay it around the base of the pile in order to protect the surrounding tissues

from the action of the acid; then wind a slender stick with another bit of cotton, dip it into the acid, and apply it thoroughly to the surface of the hemorrhoid, being very careful not to allow any of it to come in contact with the integument at the margin of the anus, or with the surrounding tissues within the rectum; then either moisten the whole surface of it with a solution of the bicarbonate of potassa or soda, or oil it thoroughly with sweet oil or vaseline, and return it within the sphincter muscle. The effect of the acid will be to produce a slough. The slough will soon separate, leaving a healthy sore, which in a few days will granulate and heal up.

Remember that I do not recommend the use of these acids in any other form of internal piles except such as have the granular, ulcerated, mulberry-like appearance, that are flat, thin, and spread out over a considerable surface, so as to render it impossible to deal with them by the ligature or by excision. The best caustic for this purpose is, as I have just told you, the strong, chemically pure, fuming nitric acid. Another remedy which I sometimes use is a solution of chromic acid, one hundred grains to the ounce of water. Pure carbolic acid also sometimes answers an excellent purpose. The nitric acid is probably the most painful at the time if you operate without an anæsthetic. Chromic acid is not painful at the time of its application, but becomes so in an hour or two; at least, such is my experience with it when applied to venereal warts about the anus and penis.

And I suppose the explanation of it is that it is slower in its action than nitric acid; it does not take hold of the tissues quite as promptly. Carbolic acid is rather painful at the time, but it is only momentary.

Next the clamp and scissors, followed by the actual cautery. This is a very fashionable method of treating internal hemorrhoids at the present day. It was introduced into practice three or four years ago by Dr. Henry Smith, of London, although I believe it was first proposed a good many years before by Dr. Cusack, of Dublin. It consists in grasping the pile after protruding it with a clamp. The instrument consists, as you see, of two flat blades with straight serrated edges attached to a long pair of handles like scissors. The upper surface of the clamp is of steel while the under side is protected by two plates of ivory or bone, riveted on to it, the object of which is to guard the surrounding tissues during the application of the cautery from the effects of the heat.

To illustrate its use, I will make an artificial hemorrhoid by covering this sponge with a piece of lint. The hemorrhoid is seized with a tenaculum by an assistant, and drawn out from the surface. The clamp is then applied and fastened by means of the thumb screw between the handles, then with a pair of curved scissors, cut off the portion above the clamps, and finish the operation by applying the actual cautery at a dull red heat to the stump until

all the vessels are seared; and perhaps the best instrument for this purpose, if you can get it to work, is what is known as Paquelin's thermo-cautery. A little experience with Paquelin's cautery will enable you to manipulate it satisfactorily. A good many failures with the instrument are probably due to an imperfect knowledge of its mechanism and a want of skill in handling it. As soon as the parts are thoroughly seared the clamp is removed and a little oily substance introduced into the rectum. Next replace all the piles, and leave the parts to take care of themselves. One thing more in this connection. You probably have no idea, unless you have used one of these instruments, of the amount of heat which is radiated from the surface of a little platinum point like this when it is brought up even to a red color, and unless you are careful in using it, the whole circumference of the anus will be burned as well as the stump of the pile. As a means of protecting the margin of the anus from this injury, let me advise you, before beginning the operation, to take a goodly quality of common collodion, which consists of a solution of gun cotton in ether, and paint the anus all over with it by means of a camel's hair brush. Then before applying the cautery, allow the parts to dry thoroughly; or, in other words, allow the ethereal portion of the collodion to evaporate. Otherwise if you apply the cautery while the collodion is moist, you will set the patient's anus on fire. Managed in this way it will

afford an admirable protection to the parts against the action of the heat.

The fifth method consists in the dilatation of the sphincter muscle, and we find that a few cases of internal hemorrhoids can be very satisfactorily treated in this way. It is not by any means applicable to all. And when you stop to consider the condition in many cases, you will easily understand why. Just ask yourselves the question as to the cause of pain in internal piles. Is it not usually due to constriction by the spasmodic action of the sphincter muscles? But in some cases, as I have already stated, after protrusion of the piles has happened many times, the sphincter muscles become permanently relaxed, so that every time a movement of the bowels occurs the piles slip out. They are not constricted in these cases, and the only difficulty that the patient experiences is due to the friction of protruded parts against outside substances, such as the clothing. Obviously, then, in a case of this kind there is no constriction to overcome, and consequently forcible dilatation of the sphincters will do no good whatever. The case is one for treatment by ligature, or by the clamp, the scissors and the actual cautery. Indeed, in many of these cases the dilatation of the external sphincter has become so excessive that unless you apply the actual cautery to its margin in two or three places you will not be able to overcome the tendency to prolapse. In a few cases, however, in which the piles

are of recent origin, where they are small, protruding with each effort of evacuation and become inflamed and strangulated within the sphincter muscle; in young subjects, dilatation of the sphincters, carried to the point of paralyzing them for a few days, will perhaps cure the disease altogether. But remember it is to be used in carefully selected cases only.

Next, with regard to the écraseur and the wire. At one time it was a favorite method with certain eminent surgeons, but it has certain objections. In the first place, it is very slow in its operation, and some cases are exceedingly difficult to manage. In the next place you never know exactly how much tissue will be included in the loop; possibly a large piece of mucous membrane may be drawn in with it as you tighten the screw, and if that is taken away, subsequent contraction of the rectum will ensue. Then again, it is an exceedingly barbarous, inhuman operation; it almost invariably leaves the patient to suffer for many hours subsequently. And lastly, it is frequently followed by excessive shock. There are a few cases on record in which delicate patients have died from this cause after the use of this instrument.

As to the galvano-caustic wire. I do not see that there are any special advantages in its use. If we are to use the actual-cautery in any way, I think you can accomplish all that is desirable either with the red-hot iron, heated in the furnace, or by the use of

the thermo-cautery of Paquelin preceded by the clamp and scissors. Another objection to the galvano-caustic wire is this: as the batteries are constructed at the present day, they will often fail to act at the critical moment or something will occur in the manipulation of the battery, even in the hands of a skillful manipulator, to interfere with the success of the operation. Then again you can not always produce just that grade of heat which you desire. If you carry it up to a perfectly white heat and use it in that condition, the pile will probably bleed quite as much as it would have done had you cut it off with the knife. I do not say this, gentlemen, on any theoretical grounds whatever, or from any prejudice in the matter; I have experienced it time after time with these instruments. I have used the galvano-caustic knife in a number of cases of the operation of circumcision in adults, where my object was to remove the prepuce in order to treat a chancroid underneath, which had produced a phimosis, and where I wished to sear the edges of the wound, so as to prevent inoculation, I have been unable to regulate the amount of heat, and had about the same amount of hemorrhage and about the same kind of a wound that would result from the use of the knife. Another objection is that most of these instruments are very large and cumbersome; they contain a large quantity of a semi-caustic fluid; unfortunately, too, the majority of them leak; if you take them into a house and place them upon the

carpet, the patient will be reminded of your visit within a week or two by seeing two or three square feet of the carpet turn yellow at first and then quietly disappear. The instrument is so heavy that it usually requires an express wagon to transfer it from your office to the house of your patient; it impresses the people in the house, and especially the patient, with the idea that some terrible operation is to be performed. There are one or two batteries, (Dawson's and Piffard's) which are small and portable, but they are all expensive, costing any where from twenty-five to eighty dollars, and most of us who are poor (?) practitioners can not afford to buy instruments of that kind if we can succeed with other and simpler means.

With regard to the treatment by carbolic acid injection, you have probably seen in the medical papers during the last two or three years reports of cases thus treated. The operation consists in making a solution of equal parts of strong, pure, carbolic acid, glycerine and water. Drawing some of this into the hypodermic syringe and injecting directly into the center of the pile from ten to twenty drops. Unfortunately I cannot speak to any great extent from personal experience about the results of the operation, because in all the cases in which I have used it, the patients have not come back to report; they have apparently been satisfied with one operation. Whether they got well or not, I am unable to say. Of one thing, however, I am sure, viz., that

after having looked the question up pretty carefully, I shall never make use of this means again. I do not believe that it is safe to inject any substance capable of producing coagulation of the blood into a vascular tumor, whether it be an internal pile or a nævus. My reasons for this belief may be stated under three heads: First, the irritation induced may go far beyond what is intended; secondly, if a clot is formed it may eventually disintegrate and a fragment find its way into the general circulation, giving rise to embolism, or it may decompose; in the third case become absorbed into the circulation, either through the veins themselves, or by means of the lymphatics, thus inducing septicemia or pyemia. I would advise you, therefore, although it is about the last thing that has been devised for the treatment of piles, not to try it.

The after treatment, whatever means you made use of, will consist in confining your patient to the recumbent posture for a few days. If the treatment be by ligature, confine him until the ligatures come away, if possible, which will usually be within six or seven days. Introduce into the rectum immediately after the operation an anodyne suppository composed perhaps of two grains of the aqueous extract of opium with half a grain of the extract of belladonna, mixed with cocoa butter; or, if you prefer, give him one grain pill of gum opium, once in two to four hours for two or three doses, and after that at longer intervals, as may be necessary, until the

pain shall have subsided. But remember if you dilate the sphincters in these cases, the patient will not suffer very much pain, and one dose of the anodyne will probably be all-sufficient. Another object in using the opium is to keep the bowels confined for a few days during the separation of the ligatures, or the eschar; and to keep every thing quiet. The diet should be of the lightest character during the first few days, consisting of gruels and broths, with, perhaps, a little ripe fruit, but no hearty food. At the end of two or three days a mild laxative may be given, such as will open the bowels in a quiet, easy manner. Barker's laxative pill is one of the best. ℞. Compound extract of colocynth, one scruple; extract of hyoscyamus and powdered socotrin aloes, of each ten grains; podophyllin and ipecac, each one grain; mix, and divide into twelve pills. Of these one may be given night and morning until the bowels move, or you may use any of the laxative mineral waters.

One word more. In some cases after an operation for piles the patient will have a very irritable bladder, sometimes taking the form of strangury, and at others of retention. It is not necessary in such cases to introduce a catheter at once, but first instruct the patient to take a warm hip bath; let him sit in it for fifteen or twenty minutes; then put him into a warm bed and give him a full dose of opium, combined, if you please, with the spirits of nitrous ether. As soon as the opium begins to act in quiet-

ing the irritable bladder and the action of the warm bath upon the skin is obtained he will be relieved. In other cases you will have to use the catheter. I operated upon a nervous lady last week for internal piles, and for two or three days after the operation I was obliged to use the catheter. The bath and the opium failed in their effect.

Before closing the lecture, gentlemen, let me tell you what to do with cases of internal piles upon which you have operated and in which there is a secondary hemorrhage. Sometimes, in patients of unhealthy constitution, when the ligature separates, or the eschar comes away, there will sometimes be profuse bleeding. The best way to deal with it is to expose the interior of the bowel by thoroughly re-stretching the sphincters, if they have contracted after your first dilatation. Then take in a pair of forceps, a sponge of a conical shape and as large as a good sized orange, through which you have carried a ligature in such a manner that the loop of the cord embraces the apex of the cone, while the ends pass out through the base; now compress the sponge after wetting it, and sprinkle it all over with tannic acid, or with powdered persulphate of iron, if it be an aggravated case, and carry it at least five inches up into the rectum, and then take several wads of absorbent cotton, dipped in the same preparation, and pack the lower portion of the rectum underneath the sponge, as thoroughly as you would tampon the vagina for hemorrhage after miscar-

riage. As soon as you have packed the rectum full, clear down to the external sphincter, take hold of the thread that hangs out of the anus, and make traction upon it while you support the cotton underneath with your fingers, the effect of which is to flatten the sponge from above downward, and produce pressure all around the circumference of the bowel. In this way I believe you will control, without any difficulty whatever, every case of secondary hemorrhage from these parts, which you will be called upon to treat.

LECTURE V.

PRURITUS ANI.

GENTLEMEN: Another exceedingly troublesome affection of the lower end of the rectum is the disorder known as pruritus ani, or painful itching of the anus, and I deem it worthy of passing notice this morning from the fact, that, while generally curable, it is likely to prove most intractable and obstinate in its nature unless properly understood.

Let me state my belief then, at the outset, that this morbid condition ought not, strictly speaking, to be regarded as a disease of itself, but rather as one among many symptoms arising from certain other states of the system or of the parts.

If you ask a patient who is suffering from this affection to describe its behavior, he will probably tell you that the irritation is usually worse at night after the body has become warm in bed, and that frequently the greater part of the night is rendered sleepless and inexpressibly wretched by it; toward morning, worn out and exhausted by the irritation, he may fall into a fitful slumber, awakening again, presently to find himself engaged in his favorite pastime of scratching. For this purpose he will generally employ his finger nails, and the longer and

sharper they are the better; or he will use a portion of his night-dress twisted up into a wad; or a piece of the sheet, and the rougher and harder the substance is, the better he will like it. At this occupation he will work as indefatigably as the traditional boy, who you will remember, was once engaged in digging out a woodchuck from a bank of gravel. The story runs thus: that a minister riding along the highway early one morning, found two boys engaged with a shovel and hoe digging in a bank of gravel, and he said to them: "Good morning, my little sons. What are you doing?" "Why, sir," replied one of them, "we are digging out a woodchuck." The minister continued his journey, and about sundown returning by the same way, he found his two little boys begrimed with dirt and perspiration still engaged as in the morning, and he said to them, "Boys, haven't you got that woodchuck yet?" "No, sir." "Do you *expect* to get him?" "Get him!" said one of the boys, "why, we have *got* to get him. The minister is coming to our house to dinner and the family is all out of meat."

For the time being the irritation of scratching affords relief; sometimes it is accompanied by the most pleasurable sensations, and I remember one patient in particular, who derived so much comfort from it that he frequently experienced an orgasm while thus engaged, until finally he adopted it as the most convenient, the most successful, and the least troublesome method of masturbating.

In aggravated cases, however, the iritation is not confined to the night, but persists equally during the day, so that the patient becomes almost a monomaniac on the subject of his anus. He thinks about it as constantly as a certain old lady of whom I once heard, who, when about to die in consequence of a serious diarrhœa, sent for her spiritual adviser. The good man came, and the first question that he put to the old lady was, "Madam, do you ever think of your latter end?" Rousing a little, she replied, "My latter end is it? faith, if you had the diarrhœa as badly as I have, it is your latter end you'd be after thinking of *all* the time!"

If he stops to speak to a friend in the street, he listens, to be sure, but abstractedly, with averted face; forgets immediately what has been said, and looks furtively around for some convenient object hard by against which to scratch his anus. If he is in society and in conversation with a lady, there are moments when he seems to appreciate the bright flashes of her beauty and her grace, but immediately his thoughts revert to his malady, thus associating in his own mind the fragrance which surrounds the flower of her loveliness with the odor of feces and all uncleanliness. In other cases that I have seen the patient is haunted with the ever present idea that a worm, half protruding from the bowel, is gyrating backwards and forwards between his buttocks, basking, if I may use such an expression in this connection, as only a blind worm knows how to

bask, in the orifice of that dark and dingy passage, and he feels that if he could get his hand there without attracting the notice of bystanders, and wring the accursed thing by the neck, even while disporting itself, all would be well. Indeed such a patient will very often leave his business during business hours, and will retire to the privacy of his closet, not indeed to pray, but to indulge himself in the luxury of a comfortable scratch, believing with a certain old sailor that the two most delightful things in the world are, first, "to eat when one is hungry," and, secondly, "to scratch when it itches." As a result of this constant irritation the epithelium of the parts is removed, the delicate skin which lines the orifice or verge of the anus, and frequently that of the perineum as well, is excoriated; the parts are left angry and raw, thus paving the way for fissure, ulceration, and hemorrhoids, and in every way adding to the patient's distress.

The little picture which I have sketched for you, gentlemen, is not an exaggerated one by any means. I have seen patients by the score, and you will see them when you get into practice, whose life is rendered perfectly miserable by this affection; and recollect, as I told you in the beginning of my remarks, that while it is curable in most cases, unless you understand it rightly, you will find it one of the most intractable and obstinate disorders that you will be called upon to manage.

When we come to inquire into its causes we find

that they are various; sometimes depending upon a morbid condition of the nervous system alone; sometimes upon irregularities in diet and the general habits of life, such as indulgence in drinking, smoking, and highly seasoned food; at other times depending upon certain diseases of the liver which induce, as you know, congestion of the hemorrhoidal plexus of veins; sometimes induced by simple constipation or pressure on these vessels by the daily passage of a hard, difficult stool; sometimes by the presence of piles or hemorrhoids, sometimes depending upon disease, or malposition more properly speaking, of the uterus—of which I will speak again in a moment—sometimes resulting from skin diseases, and again due to the presence of parasites either of an animal or a vegetable character. First, then, let me say a word about the appearance of the anus under these circumstances. In this respect, much will depend upon the duration of the disease, and also upon the amount of scratching or irritation to which the parts have been subjected. In a recent case you will generally find one of two conditions: First, the skin covering the verge of the anus and a little way outside of it toward the perineum, will be red, and if it has been recently irritated, as you put your finger upon it you will find that it has a moist surface. In other words, that the epithelial covering has been removed, and that from the surface of the corium there is exuding a small quantity of clear serum, keeping the parts wet, and in a smarting,

uncomfortable, irritable condition. If it has not been recently irritated, you may find it of a dull, dingy color, and covered with small furfuraceous scales, little flakes of the epithelium which have perished but which are not yet detached from the surface, attached at their middle and turned up at both edges. These, in my opinion, have very much to do with the itching itself. I believe, in other words, that by coming in contact with the exposed and tender surface of the true skin the irritation is greatly increased.

So much, then, for the appearance of a recent case. Now, let us take another variety, one that has been going on for years. Here very marked changes may have taken place. The natural pigment which belongs to the skin in this part of the body is removed, and in place of it there will be patches of whitish-looking skin, having a tallow appearance, or about the color of common beef tallow, sometimes surrounding the whole verge of the anus, or arranged in irregular patches, smooth upon their surface, and thickened to the touch.

In addition to these changes you will find, especially in recent cases, that the skin around the margin of the anus, including that portion in which the little radiating folds with which you are all familiar, are situated, is the seat of a great number of very minute cracks, or fissures, extending only through the epithelial layer, but which are sufficient to give rise to an infinite amount of distress. These minute

fissures are most troublesome in warm weather when the parts are perspiring—especially when the patient is walking—the acid perspiration running into the cracks as they are opened by the motion of the buttocks, and inducing a series of the most intensely acute stinging pains.

From what I have already said, therefore, you will understand the importance of ascertaining the cause of the disease as far as possible, remembering that it is not a disease of itself, as a rule, but usually a symptom of something else. Inquire, therefore, very carefully into the patient's habits of life, ascertaining whether he has any disorder of the liver, any disturbance of the portal circulation; inquire into his habits as to diet, and the use of alcoholic stimulants and tobacco, since I believe that many of the worst cases are dependent upon excessive smoking or over indulgence in wine. You will also make a very careful investigation into the condition of the anus itself: see if you can find a fissure, a pile, a polypus, or any of those morbid conditions to which I have alluded.

As to the treatment of the disease. The great number of such cases will occur in people of plethoric habit—people who are called free livers, who eat and drink largely, and who take an insufficient amount of exercise. In all such cases you will say to your patient, when he comes to you for advice, "unless you intend to lead a new life, and to follow out religously all of my directions, I can not agree to do you any good; in fact, unless you so promise, I would prefer

not to take your case." Understand me, gentlemen, unless you can make the patient submit himself entirely to your directions, and can put him upon his honor as a man of truth and probity, you must not agree to effect a cure. Speaking of truth and probity, suggests an anecdote which, though quite foreign to our subject, may serve to make you more attentive to what I am saying. A good many years ago, a certain old captain sailed out of Nantucket as commander of a whale ship, on a cruise after sperm whales. The first whale that was struck stove the first mate's boat, and the crew were spilled into the water. In the general confusion one of the men was so unfortunate as to hook the seat of his trousers on to one of the whale's teeth, and while thus suspended the whale ran with his head out of water a distance of about two miles. Finally a piece of the pants tore out, and the man dropped into the sea, from which he was soon rescued by his comrades in another boat. When he got on board the ship, Captain Williams said to him: "Well, Jack, how did you enjoy your ride?" And the captain, in relating the anecdote, was in the habit of saying that Jack assured him upon his word and honor, as a man of truth and probity, that he never wanted to hang his clothes on such a peg as that again.

Let us suppose, then, that we are treating a patient of plethoric habit, one who indulges largely in animal food, takes a certain amount of stimulants with his meals, and perhaps at other times as well. Such

a patient must, in the first place, be put upon a restricted diet. He must give up, to a large extent, his indulgence in meat, must make his meals mostly of fish, milk, starchy material and fruit. Especially he must avoid eating meat which has hung for a long time, until it has reached that advanced stage of decomposition which an epicure calls "high," such as venison, English hare, etc. All of these indulgences, I am sure, with such a patient, increase the tendency to pruritis. If he is a smoker, you must take away his cigars and his pipe altogether, as I am equally sure that many of these cases are aggravated and kept along month after month and year after year in consequence of the excessive use of tobacco. And when I say I am sure of it, gentlemen, it is because I have watched its effects in a large number of cases, and I have found that many of those who are troubled in this way, when they become involved in a little business difficulty so that they are mentally disturbed for a number of days in succession, and are in the habit of soothing themselves, as they say, by smoking a large number of cigars or cigarettes, the pruritis from which they suffer is always aggravated to an alarming extent. I know many a patient who is free from the disorder as long as he will let his cigars and pipe alone, but as soon as he resumes them and carries them to an excess he is tormented with his anus almost beyond the power of endurance.

Another article of diet, or of beverage, more properly speaking, which I believe is an important factor

in aggravating this trouble, is strong coffee; and where you find a plethoric, red-faced individual with pruritus ani, who is in the habit of taking two or three large cups of black coffee with his breakfast, cut him off from that at once, and I think you will find that he will be benefited by the denial.

In the second place, such a patient ought always to have a large amount of exercise. He ought to be compelled to walk two or three miles every day, and walk rapidly enough to induce a certain degree of perspiration if possible.

Again, such a patient ought to resort to frequent bathing. There are many people who go about the world year after year, and who apparently think it is not necessary to wash either their feet or their anus, thus making of themselves a walking pestilence. My opinion is, gentlemen, that the anus is a part which requires frequent ablution, and I think it would be far better for the race if it were our constant habit to wash this portion of the body almost as frequently as we wash our hands and face. I do not mean that a physician, for instance, who is practicing largely in his office, should stop and wash his anus every time he washes his hands. But I believe he would be a great deal happier man if night and morning he would devote five minutes to this object, attending to it as religiously and regularly as he says his prayers. This is my honest conviction, and I believe we should have a great deal less trouble than we do from such diseases as pruritus, fissure,

hemorrhoids, etc., if it was a common custom for people to attend to this matter of cleanliness, which is next to godliness. Such a patient indeed is always benefited if he can get two or three times in the week a Turkish bath. Said Bayard Taylor: "The man who has not taken a Turkish bath has never risen to the moral dignity of being personally clean." When this is not to be had or is beyond the patient's means, great benefit is to be derived from washing the parts night and morning with tepid water and some of the various disinfecting soaps, such as the carbolic, the tar—or what I like better than either for this purpose, the juniper tar soap, manufactured by Caswell, Massey & Co., of this city.

In addition to these means such a patient should be treated systematically with laxatives; there is always in such cases a congested state of the hemorrhoidal vessels, and if you can insure a comfortable, soft movement of the bowels every day, by the use of some one of the laxatives of which I have spoken a number of times in connection with other diseases of the rectum already considered, you will have made a good beginning. Some patients will do better upon the alkaline mineral waters; others will be most benefited by a pill containing a little aloes, a little hyoscyamus, a little podophyllin, and a little compound extract of colocynth. Others will do well if you give them a reliable preparation of taraxacum or dande-

lion; others will succeed best with that laxative which I have described to you as consisting of equal parts of the sulphate and carbonate of magnesium, precipitated sulphur and bitartrate of potash taken in doses of one or two teaspoonfuls mixed with syrup in the morning fasting. Again, the introduction into the bowel of large injections of cold water exercises a very beneficial effect upon the hemorrhoidal vessels. The coldness of the water produces an astringent effect; it benumbs the hyperæsthetic condition of the nerves which supply the parts, so that a patient who is otherwise tormented during the whole of the twenty-four hours with pruritus, will often find that by taking a large injection of cold water after his morning stool, he will go through the day in a tolerably comfortable manner.

So much for the class of patients who are of a plethoric habit. But you will find that the disorder occurs frequently in a class who are simply nervous; in whom, do what you will, you can not find any local cause for the complaint, or any constitutional cause for it, except, as we say, they are very nervous people. In such cases the irritation is generally confined to the night. It begins as soon as the patient begins to undress. The touch of a fresh garment that is a little colder than the flannel that has been taken off, against the leg or the buttock will initiate the attack; the scratching performance begins and goes on all night. In such patients there is always

a condition of hyperæsthesia of the skin surrounding the margin of the anus, and in addition to this there is generally a depraved condition of the nervous system at large.

For such patients I do not know of any thing better internally than a full dose of the bromide of potassium, twenty or thirty grains taken in solution at bed time, and in some cases combined with ten or fifteen grains of the hydrate of chloral. I have seen many of these nervous patients, especially women, relieved at once by these remedies. In all cases, however, of a nervous character, with hyperæsthesia of the skin, some local application is of great benefit; and perhaps one of the best prescriptions which I can give you for this purpose consists of a solution made as follows:

℞. Sodæ Biboratis,	. . . . .	ʒ ii
Morphia Mur.,	. . . . .	grs. xvi
Acidi Hydrocyanic. Dil.,	. .	℥ ss
Glycerinæ,	. . . . .	ʒ ii
Aq.,	. . . . . Add	℥ viii

Mix and have the parts thoroughly sopped with it as many times in the day as the patient finds time to apply it; especially have it used at night.

Another application of local character, which is also sometimes exceeding useful and grateful to the patient is an ointment which contains chloroform; you can make it in this way:

℞.	Chloroformi, ...	ʒ ii
	Glycerinæ, ...	℥ ss
	Cerat. Simp,.	℥ iss
	M. ft. ung.	

This ointment applied to the surface that is irritated, although it invariably produces a very sharp, smarting pain at first, especially if the parts have been recently scratched with the finger nails or are full of those minute fissures which I described to you, yet it is one of those stings which carries its own balm with it, and in a very few moments it allays the peculiar morbid sensibility of the peripheral extremities of the nerves which are distributed to these parts.

When you find that pruritus ani is dependent upon hemorrhoids operate at once and remove the cause. Again if you find, in the case of a woman, that the congestion of the hemorrhoidal veins is dependent upon a retroverted uterus, a uterus which is turned over backward so that the body of it presses continually against the wall of the rectum, and impedes in that way the return circulation, then the obvious procedure is to replace the uterus by mechanical means, and keep it in position by a suitable pessary.

We come now to another class of cases in which the cause of the disorder is to be found in a diseased condition of the skin itself, eczema is perhaps the most common variety. Here the treatment will be

entirely different. The disease must be managed in accordance with those principles which guide us in the treatment of eczema any where else, by free doses of arsenic internally; and if the patient is debilitated, or anemic, the arsenic must be combined with iron and cod-liver oil. Locally applied those substances which are known to do good in common eczema, and perhaps one of the best of these is a mixture of equal parts of the ointment of nitrate of mercury or citrine ointment, the ointment of the oxide of zinc, and the ointment of subacetate of lead, mixed together in equal proportions into the form of an ointment. Rub together thoroughly in a mortar, and let the patient apply as freely as he likes. I have succeeded in curing a large number of cases of this form of the disease by the administration of Fowler's solution of arsenic alone.

You may be led in some of these aggravated cases, where the patient is suffering, especially at night, and unable to sleep, to prescribe an opiate. Let me advise you against its use, for while an opiate will bring temporary relief, it will be only temporary. The next day when the effect of the opiate is wearing off your patient will probably be ten times worse than before, and if you begin to treat these cases with opium you will find that very soon the patient will contract the habit of taking it as a regular thing, and will want it at all times so soon as he learns that it brings temporary relief.

Again, in some old cases in which the skin has lost its pigment, as I mentioned to you in the early part of the lecture, a very good way to begin your treatment, unless you can find some constitutional cause for the disorder is to pencil the surface over thoroughly with a solution of the nitrate of silver, of the strength of two scruples to an ounce of water. It ought to be done after cleansing the parts of all greasy material if any ointments have previously been used by a good washing with soap and warm water, and repeated two or three times in the week for one or two weeks, so as to change the character of the skin, which is always greatly thickened under these circumstances.

Another means which sometimes gives a good deal of comfort at night during this trouble, consists in a little piece of bone, ivory, hard or soft rubber made into the form of a plug of the shape of a common rubber nipple, such as belongs to a nursing bottle, with a little shield on the outside to prevent it from slipping into the rectum. If this is oiled and introduced into the rectum for a few hours it will frequently give the patient the greatest possible relief. It probably acts by inducing a slight amount of pressure and in that way diminishing the quantity of blood in the hemorrhoidal veins, and the idea of using it for this purpose was suggested by the fact that patients sometimes find great comfort in the disorder by inserting the finger into the rectum.

We come now to speak of some of the different varieties of parasites which induce this troublesome affection. In the first place we have that hideous little monster which is known as the crab louse, the pediculus pubis, whose special habitat is in the hair of the pubic region and in that surrounding the anus. The crab louse does not run about like the pediculus corporis and the pediculus capitis, but grasps the roots of the hair with its fore legs, and in many cases buries its head in the skin. The itching induced by its presence is intolerable, while its small size sometimes renders its detection extremely difficult except from a very close and careful examination.

Indeed the creature is so small that the patient often mistakes it for a particle of dried blood which has been exuded upon the surface in consequence of scratching. If you have any doubt about the nature of such a spot in a suspected case, take a pair of dressing forceps, pick one of them up and take it into a good light; its six legs and a dozen or more other movable appendages are always in motion and will at once reveal its character. As a remedy for this form of itching, a solution of corrosive sublimate, two grains to an ounce of water, applied thoroughly several times to the roots of the hairs, followed each time by a bath and a change of underclothing, will be found very efficacious. Mercurial ointment is equally good, but is a disagreeable remedy on account of its color, to say nothing of the

danger of its producing salivation. The remedy which I prefer, however, to all others is the tincture of delphinium or larkspur, which is kept in all the drug shops of this city for the treatment of all forms of lice: body lice, head lice, and crab lice. It is certain death to all the varieties, besides being cleanly and having only a slight faint odor. It should be applied with a small sponge, thoroughly moistening all of the hair and the skin of the parts. Two or three applications usually suffice—and frequently within four hours after the application the lice will all be found in the tight part of the drawers around the ankles—and all dead. I have known patients to wash themselves in a strong solution of tobacco for this trouble, but the crab louse rather enjoys tobacco than otherwise. In fact, during the last war we were in the habit of saying that one of them if put into a box of mercurial ointment (which was the government remedy), and kept there for six months, would come out in a better condition than when he went in. I suppose, however, that the ointment was frequently old and unreliable.

There is another parasitic disease of a vegetable character, concerning which I wish to say a few words, as I deem it very important in this connection, viz., that disease of the skin which is generally known as pityriasis versicolor, characterized by a brown or yellow scaly patch upon the skin. The disease is much more common on the chest, back,

neck and upper extremities, yet I believe it affects principally those parts which sweat a great deal, and hence frequently makes its appearance on the perineum and about the anus. Among the laity these patches are supposed to be due to some derangement of the liver, and for this reason were formerly known by the name of maculæ hepaticæ. If you will scrape one of these spots with the knife and put the resulting dust under the microscope, you will find it consists of groups of spores or conida, having short threads resembling the branches of a plant curved hither and thither amongst them. The disease always produces intense itching but requires the aid of the microscope to enable you to make the diagnosis satisfactorily.

Almost any of the preparations of sulphur applied locally will destroy it in a very short time. A solution of salicylic acid in alcohol, about ten grains to the ounce is an excellent remedy. Another very useful remedy is the green soap of the German pharmacopœia, a strong alkaline soap which made into a solution with equal parts of alcohol, or perhaps one-third of alcohol, and applied, will destroy in a short time the epithelium over this surface and it will cure the disease. Still another useful application in this form of disease is a solution of sulphurous acid, combined with water or glycerine in the proportion of one part to six.

One word more, gentlemen, before we close. A great many of these cases, especially in children, are

dependent upon the presence of pin worms, or thread worms, as they are called, the oxyuris vermicularis, and I have no doubt some of the cases, such as I have described to you, where a man imagines that a worm is squirming about the outside of his anus, are really dependent upon the presence of these little pin worms. In female children, as you probably know, they sometimes crawl out of the rectum into the vagina, produce great irritation and frequently leucorrhœa.

The remedy is very simple, but first you must make the diagnosis, examine the rectum, examine the stools; if you find one worm be very sure there are many more, like the song we used to sing during the war, "We are coming, Father Abraham, six hundred thousand and more!"

Being situated so near the rectum enemata have at all times been much used in the treatment of these cases; bitter infusions and astringent solutions are the best for this purpose, such as a solution of the tincture of muriate of iron ʒ j to Oj or a strong infusion of quassia or of white oak bark. Lime water is also useful as an injection. But whatever is used it must be employed thoroughly and frequently at least three times in a week. At the same time some cathartic medicine should be administered—such as compound decoction of aloes two or three times in the week—or the fluid extract of pink root and senna the object being not only to bury the dead—but also to clear the rectum of a large quantity of tena-

cious mucus which is almost always present in children who suffer in this way—from the fact that they generally have a slow imperfect digestion and the secretions from the mucous membrane of the alimentary canal are usually abnormal.

LECTURE VI.

FISSURE OF THE ANUS.

GENTLEMEN: For our study this morning we take the subject of fissure of the anus; a disease, which, considering its very insignificant extent, is probably capable of inducing more local suffering, as well as more constitutional disturbance than almost any disorder to which the flesh is heir.

Although commonly spoken of as "fissure of the anus," it would be more in accordance with its true pathology to designate it as "irritable ulcer of the rectum" the name by which it is now generally known among the best authorities. For, while it is perfectly true that, in by far the greater number of cases the disease begins as a simple fissure or crack in the delicate muco-cutaneous tissue which lines the verge of the anus, and depending usually upon constipation and over-stretching of the parts; yet the majority of such fissures are only transient in their nature, healing very frequently within a period of from twenty-four to forty-eight hours by the unassisted efforts of nature alone, in a few we find that the constant repetition of over-distension of the anus with each successive movement, coupled with a de-

praved condition of the system, induces a state of irritation in what was at first a very simple and harmless crack. As a consequence of this irritation, aggravated daily by mechanical injury, the wound finally becomes inflamed, and in proportion as the inflammatory process advances, the reparative process diminishes until it ceases altogether; a larger solution of continuity, by molecular death takes place; in other words, an ulcer is formed, which from being again daily subjected to mechanical violence, and the contact with acrid and irritating substances from the interior of the bowel, soon takes on the form of an "irritable ulcer," the chief characteristic of which is, as I presume you all know, an excessive amount of pain considering the extent of the lesion, whether it occurs in the anus or on the skin.

In a few words, then, you have the pathology of the disease. Let me repeat.

Beginning as a very small fissure or crack, as a result of constipation and over-stretching of the gut, the simple fissure soon takes on inflammatory action, and as the inflammatory process extends, the tendency to repair diminishes, until finally we have a breaking down of the tissues by molecular death just as it occurs when an ulcer forms in the skin any where else, and that owing to the peculiar locality and surroundings of the sore it almost invariably assumes the character of the *irritable* ulcer.

I will endeavor to explain the reason for this fact a little further along.

Let us inquire in the next place as to the appearance of these fissures of the rectum and anus. A good deal will depend upon the locality of the sore, thus, some of them are situated on the outside of the anal orifice, and beyond the grasp of the external sphincter ani, affecting only the muco-cutaneous tissue; these are usually not more than a few lines in length, and occupy the grooves between the duplicatures of the skin about the verge of the anus, and may readily be seen on separating these folds. They appear in the form of excoriations or abrasions, consisting in the removal of the epithelium, or in the form of narrow chaps, or oval or circular ulcers having a yellow or ash-colored base.

In the second class the fissures are situated immediately within the anal orifice, and affect the mucous membrane lining the sphincter externus and are situated opposite to or on a level with this muscle. Their lower portion can generally be seen on forcibly separating the buttocks and the anal orifice. They are usually from one-half to one inch in length, and present themselves as a bright red line with sharply defined edges, or as an oblong, irregular-shaped ulcer, having a grayish, sloughy-looking base. They generally extend quite through the mucous membrane, and in some cases the fibers of the sphincter muscle can be seen lying exposed in their bottom.

In the third variety the ulcer is placed in the middle region of the anus, or about half way between the external and internal sphincters. It is more

often circular in form than the variety last described; varies in size from that of a split pea up to that of a dime. Its edges are frequently indurated, especially if the sore is of long standing, while its base is sometimes bright red—sometimes grayish in color. A small pedunculated pile or polypoid growth attached to the opposite wall of the bowel is frequently found in these cases.

The growth lodges in the ulcer, adding to the irritation and increasing the difficulty of cure. In speaking of the causes of fissure we may safely place constipation at the head of the list. Diarrhœa and dysentery predispose to its occurrence by inducing congestion and sometimes ulceration of the mucous membrane of the rectum. With females many fissures originate in the stretching of the anal orifice and the sphincters during labor, when the child's head is distending the perineum. Syphilis is probably responsible for another class of cases, developing as one of the secondary symptoms of constitutional poisoning —in connection with numerous patches around the anus—condylomata, etc., or as a primary sore in consequence of the inoculation of an abrasion or slight crack in the mucous membrane of the anus—from a chancroid on the penis or vulva.

Eczema frequently initiates a fissure by producing intolerable itching; the parts are rubbed or scratched until raw, when any acrid discharges coming in contact with it, or a difficult movement of the bowels, will make a slight tear in the tissues which, after a

few days, may develop into the irritable ulcer. Internal hemorrhoids for the same reason, viz., the itching which they create, may in like manner give rise to fissure.

When the sore is within the circle of the sphincters the sufferings of the patient are quite characteristic of the disease, on account of the spasm of these muscles induced by its presence. The sore is sensitive at all times, so that a patient avoids sitting and inclines either to rest on one hip or to lie down; the pain sometimes shoots up the back, down the legs or along the urethra; it is generally much increased during the act of defecation, but reaches its intensity a short time afterwards, owing to the fact that at this period the spasm of the sphincter muscles begin. In children, however, this rule does not hold good, the pain usually ceasing on the completion of the act.

On making a physical examination for fissure the first object of attention will be the appearance of the anus itself, which is almost always contracted, drawn up, or retracted, and frequently also a pendulous projection or excrescence, composed of the swollen integument will be noticed at one side of the anus. This excrescence is always located at the inferior extremity of the fissure, forming, as it were, its base. It may easily be mistaken for an external hemorrhoid, but if a finger be placed on each side of the tumor and it be pressed out of the anus the fissure will at once be seen. If any doubt remain

as to presence of a fissure a silver probe, slightly bent at its extremity, should be oiled and introduced into the rectum; it should then be brought down gradually, with its bent point pressing against the wall of the gut, and as soon as it touches the sore the patient will at once manifest it by the sensation of pain he will experience.

The constitutional symptoms are also usually well marked. The patient's health generally runs down; he loses flesh, becomes anemic, depressed in spirits, irritable and melancholy, disinclined to mingle in society, and is often unable to endure the slightest fatigue.

The patient who is now presented will give you an opportunity of studying the appearance of one of these ulcers of the rectum. The man is forty-five years of age, and for the last seven or eight years has been suffering from prolapse. As he forces a large portion of the gut outside of the anus you see two large, oblong, irregular ulcers, one on either side, extending entirely through the mucous membrane. He says that he has very little pain either during the act of defecation or afterward, which would tend to disprove what I have just said upon this point; but when we come to examine into the condition of the sphincter muscles the reason at once becomes apparent; the rectum has been prolapsed so many times that these muscles have lost their contractile power, the anus is patulous, and you see that I can easily introduce two or three

of my fingers; so that, although he has two large ulcers, they are not specially painful, because this one element of pain, spasm of the sphincters, is wanting. In such a case the ulcer can be made to heal by the application of nitrate of silver—which is not true of the common form of ulcer in this locality. As to the treatment of the prolapse, I shall speak of that at another lecture; and this patient will come to our clinic to-morrow, when I shall have something further to say of his case, and you will have an opportunity for seeing the proper treatment applied.

In the treatment of the painful fissure the patient should be anæsthetized, after clearing out the bowel with a large enema. Then a bi-valve, a tri-valve or a Sims's speculum should be introduced and the sore thoroughly exposed; a straight blunt-pointed bistoury is next introduced into the bottom of the fissure and made to divide all the fibers of the extreme sphincter muscle, or a curved sharp-pointed bistoury may be passed underneath the ulcer and the cut made from beneath toward the bowel, so as to prevent for a few days all spasmodic action. This is the operation of the celebrated surgeon Boyer. Where the cutaneous excrescences, to which I have alluded, are present, they should be removed at the same time by the scissors. Some surgeons prefer a more superficial incision—merely cutting through the base of the fissure, so as to divide the fibers of the sphincter muscle immediately beneath the ulcer,

or even to cut through an inflamed filament of nerve, but I believe that this minor operation is, as a rule, not nearly as effective in its results as the one I have just proposed.

You may ask, if there is no harm in making a complete division of the sphincter, and I make the same answer that I made in connection with fistula—that if the external sphincter alone is divided, and at right angles to the direction of its fibers, there is never, so far as I know, any incontinence of wind or feces; if it is divided very obliquely there may be some difficulty of this kind. The internal sphincter, however, if left intact, will usually prevent this accident.

A third and last method consists in forcibly stretching the external sphincter muscle, so as to paralyze its power of contraction for the time being. The operation is performed in this way: The patient is anæsthetized and placed upon his back; the two thumbs of the operator, placed back to back, are introduced into the rectum; the remaining four fingers of each hand are spread out so as to grasp the buttocks; the thumbs are then separated until their palmar surfaces come in contact with the tuber ischii of each side. In this way the fibers of the sphincter ani externus are ruptured, and the muscle becomes temporarily paralyzed; meanwhile the ulcer takes on a healthy granulation and a cure results. You will understand from what I have said that I prefer the cutting operation, which involves the

whole depth of the external sphincter. If you are *au fait* at rectal surgery there is no necessity for the use of the speculum, the knife being guided into the fissure along the finger; otherwise an instrument of this kind will be of great use in enabling you to see exactly where the knife should go, and also in putting the parts thoroughly on the stretch during the division.

You will cure many cases, however, by the process of stretching by the thumbs; and you have only to remember that in either case the operation must be done so thoroughly as to prevent for a few days the spasm of the sphincter muscles in order to succeed. In a limited number of cases also you will cure your patients, especially among children, by the use of stimulating applications to the sore—such as a solution of nitrate of silver, ℈jj to ℥j, the use of laxatives, and attention to cleanliness.

The treatment after an operation will consist in confining the patient to the bed or lounge for two or three days; locking-up the bowels by the use of an opiated suppository, or the injection of a few drops of laudanum. At the end of that time a laxative may be given, and the reparative process being now well advanced, the patient will be astonished at the comparatively slight amount of pain suffered when the bowels move.

LECTURE VII.

STRICTURE OF THE RECTUM.

GENTLEMEN: Like the other mucous canals of the body, such as the œsophagus and the urethra, the rectum is liable to contraction of its walls, leading to obstruction and producing the disease known as stricture.

Stricture of the rectum is practically of three kinds, viz., first, the simple variety, depending upon inflammatory thickening of the walls of the gut; secondly, the specific, due to syphilitie poisoning; and thirdly, the malignant, depending upon cancerous degeneration of the different tissues entering into the formation of the bowel, or to malignant masses developed upon or underneath the mucous membrane and producing obstruction.

A stricture of the rectum, therefore, may be very limited in extent, forming only a sharp, wiry ring around the circumference of the bowel at one point, when it is called an *annular stricture*, or it may involve a large portion of one or both walls of the intestine. The former more often follows simple inflammatory action, while the latter is more frequently dependent upon syphilitic or cancerous disease.

If you examine the mucous membrane at the site of a simple stricture, you will find that it is thickened, congested, excessively vascular, and adherent to the underlying tissues. If you remove the mucous membrane and examine the sub-mucous tissue, you will find that it has undergone a process of condensation, has become contracted and hardened. Now this change in the areolar tissue may involve only a very narrow ring around the walls of the bowel, as I have already stated, or it may extend for some distance along one or both walls as a fusiform thickened mass until it finally shades off into the natural connective tissue again.

If you look at the bowel above the stricture, in any of the varieties, you will generally find that it is not only dilated, but that the muscular coat has become hypertrophied; the first condition being the natural result of obstruction existing below, while the second is in obedience to an almost invariable law of nature that whenever muscular tissue is called upon for an increase of function the demand is met, if not by the development of new muscular fibers, at least by an hypertrophy of those already existing. The muscles of a blacksmith's arm—other things being equal—are always larger and stronger than those of the salesman; when one of the cardiac valves is either insufficient or obstructed the muscle of the heart always becomes hypertrophied in order to compensate for the lesion and meet the new demands upon its strength.

In addition to these changes, the mucous membrane at the seat of the stricture is frequently ulcerated, and from this ulcerated surface proceeds the bloody or purulent discharge which so often accompanies the disease.

Below the stricture the condition of the bowel varies; sometimes it is unchanged; more often it is congested, and occasionally ulcerated. The locality of stricture also varies, and while generally formed within one or two inches of the anus, may be met with as high up as the sigmoid flexure of the colon.

The causes of simple stricture are first, chronic inflammation of the mucous membrane and submucous tissue, induced by habitual constipation; by some slight injury to the bowel inflicted by a foreign body in the feces, such as a fish-bone, or a bit of oyster-shell, or by some hard substance introduced from the anus; secondly, ulceration of the mucous membrane with contraction during cicatrization following chronic diarrhœa or dysentery. Yet I believe that in order to produce a stricture the ulceration must be deep enough to involve the areolar tissue under the mucous membrane, otherwise stricture would be much more commonly seen than it really is, on account of the frequency of superficial ulcerations in connection with both of the above-named disorders.

Syphilitic stricture is perhaps a more common affection of the rectum than the simple or fibrous variety; is met with in both sexes, though more fre-

quently in women, and you will find in looking over the literature of the subject that the widest difference of opinion prevails among surgeons as to its pathology. Thus one believes that all such cases should be classified as *venereal* but not as *syphilitic*, under the idea that they originate in the inoculation of a fissure of the anus from the secretion of a so-called chancroid—situated on the penis or vulva so as to convert the fissure eventually into another chancroid—which, in healing, produces contraction and finally establishes a stricture. Another believes that all such cases are the result of constitutional poisoning, are among the tertiary manifestations of the disease, and are similar in their structure to a gummy deposit any where else.

For my own part I am inclined to think that the disease may arise from both of these causes. It is certainly no very difficult matter to understand how the secretion from a chancroid may find its way into the rectum, especially with the female; nor is it hard to imagine that constitutional syphilis may select the connective tissue about the rectum as a site for one of its later local manifestations, and the strongest argument against this latter theory is the fact—so far, at least, as my experience extends—that the disease is seldom cured or even benefited by any amount of anti-syphilitic treatment, and yet if we admit that it belongs to the tertiary stage of syphilis, this argument is at once offset by the other well-known fact that almost all of the later phases of

syphilis are less amenable to the action of specific remedies than those of an earlier date.

Of the third or malignant variety of stricture I shall speak more particularly at our next meeting under the head of cancer of the rectum.

The symptoms of stricture usually come on slowly and insidiously. There is constipation, of a slight character at first, but gradually growing worse as time advances; a little later there is slight pain or irritation in the rectum, especially after a stool, and accompanied by a discharge of blood or bloody mucus. As the disease advances still further and ulceration occurs, the pain during defecation often becomes intolerable, and the patient describes the sensation as being of an intensely burning character, as though boiling liquid or molten lead were being poured through the bowel. Finally, unless relieved by surgical interference, the health rapidly declines, dyspeptic symptoms, such as flatulence, pyrosis, and acid eructations supervene, the processes of assimilation and nutrition are perverted, and the patient dies partly of inanition and partly in consequence of blood-poisoning from the absorption of deleterious substances from retained fecal matter.

In some cases abscesses result from fecal matter finding its way into a deep ulcer of the rectum, the matter burrowing along in the connective tissue until it points and opens externally, converting the cavity of the abscess into a fistula.

You will see it mentioned in some works that the

stools in stricture of the rectum are long, thin, flattened and pipe-like. An irritable sphincter muscle, producing spasm, is, however, more often responsible for this appearance, not to mention enlarged prostate, tumors of the pelvis, etc.

As the majority of strictures are situated low down, the best means for making the diagnosis is to introduce the index finger, and explore the rectum with this most sensitive of all probes.

If too high up to be reached with the finger the rectal bougie must be used. An instrument composed of a wisp of tow, over which thread has been braided in the same manner as a whip handle is finished, and the whole then covered with a thick coating of gum shellac, to give it a smooth surface and to insure both toughness and flexibility.

They are, in a word, precisely like the flexible urethral bougies in common use, in their structure, and vary in size from that of a No. 10 or 12 English urethral instrument up to one and a half inches in diameter. Some of them have a round, blunt point, while others are made tapering or conical for two or three inches of their distal extremity. The conical form is sometimes useful in finding its way into narrow strictures, but I believe as a rule, is more likely to catch in the folds of the mucous membrane and thus render its passage inward a matter of difficulty, while the blunt variety easily rides over these irregularities on account of the large and more globular form of the point.

When dipped in warm water and well oiled these instruments follow the different curvatures of the bowel, so that by commencing the examination with a small one and gradually running up the scale, a very good idea of the capacity of the stricture can be obtained.

A better instrument, however, for exploring a stricture situated high up toward the sigmoid flexure is the rectal exploring sound, described in the early part of the course—and consisting of a conical bulb of ivory or hard rubber mounted on a flexible whalebone staff about fourteen inches in length. It has also the additional advantage over the other variety, that it produces no distention of the sphincter muscles after the bulb has once passed into the bowel.

A bougie composed of soft wax is also sometimes useful in enabling you to obtain an exact impression of the opening into the stricture so that you can form some estimate of the nature of the difficulty.

An instrument of from one-half to three-quarters of an inch in diameter is generally large enough for sounding the rectum, and if such a size passes easily and without much pain it may be inferred that there is no permanent obstruction or disease.

Before using any of these instruments the rectum should be emptied by the use of a large enema—after which one or two ounces of olive oil or linseed tea should be thrown in and retained in order to facilitate the operation. In all of our examinations for stricture we must remember also that the rectum

may be simply compressed at some point by the presence of a tumor in the vicinity, by a retroverted uterus, by pelvic cellulitis or pelvic hematocele. Your prognosis in this disease must always be a guarded one; for while very much can be done in simple, non-malignant cases to ameliorate the patient's condition, I believe that a complete cure is seldom effected, although you will find many such cases reported.

You are not, therefore, to promise too much, but rather let the patient understand that while marked relief may be hoped for, he will probably require a long course of treatment, the exercise of much patience, and perhaps the occasional use of the bougie for the balance of his days. In beginning the treatment we must be governed by the condition of the stricture at the time; thus, if we find it ulcerated and irritable, it will be well to touch the ulcers once a day for a few days with a solution of nitrate of silver (10 to 20 grains to the ounce of water) by means of a camel's hair pencil before making any attempt at dilatation; at the same time a suppository of opium, belladonna and cocoa butter should be introduced at night for the double purpose of relaxing the parts and relieving pain. We may then commence the use of the bougies, taking one of small size at first and gradually increasing the size at each operation until the bowel has been expanded to the normal size. The utmost gentleness and no small amount of skill are sometimes required in conducting

such an operation without really doing more harm than good, simple as it may seem. After the bougie has passed the stricture it should be left in position for a few moments, in order not only to overcome by mere dilatation any spasmodic element which may be present, but also to the end that the pressure of the instrument against the inflammatory material forming the essence of the stricture may stimulate the process of absorption.

In cases of very narrow, short strictures which are not irritable, I sometimes begin the dilatation by the introduction of a small sponge tent, or better, one composed of sea-tangle, leaving it in position for from six to ten hours—and following it with one of larger size—or by the use of a bougie. In using the tents, a good speculum is necessary in order to expose the orifice of the stricture, and the tent should be lubricated with soap to facilitate its introduction. I prefer the sea-tangle to the sponge on account of its more uniform expansion—the sponge sometimes expanding largely at both ends, where there is little resistance to be overcome, but very little in its middle, assuming a dumb-bell shape and rendering its withdrawal a matter of considerable difficulty to the surgeon, and great pain to the patient, aside from the mechanical violence done to the interior of the stricture itself. If the stricture is large enough, I sometimes introduce the smallest size Barnes's dilator, the same as that used for dilating the cervix uteri; fill it with warm water or air, and leave it in

position for one or two hours, following it with a larger size, or with the bougies. Another very useful instrument consists of a slender, flexible india-rubber tube, closed at its distal extremity and resembling a soft male catheter. Inside of this is placed a smaller tube, of the same material, running up to within an inch or two of the end of the first, but left open. In principle it is the same as the Barnes dilator, but more convenient for this purpose. In using it the small nozzle of a Davidson syringe is attached to the proximal end of the inner tube, and warm water forced through it, after passing the outer tube through the stricture; the water, of course, finds its way in between the two tubes and thus expands the outer one.

In other cases, where the stricture is of the annular variety, consisting of a thin diaphragm across the bowel, having thin, wiry edges, it is very difficult to accomplish any thing by simple dilatation; the edges of such a stricture will probably require to be nicked at three or four points with a probe-pointed bistoury or hernia-knife, guided in on the finger, after which the bougie will probably succeed. In a few such cases I have succeeded in passing the tip of my index finger into the lower end of the stricture, and then drawing it outside of the anus, where I could see exactly to what extent the use of the knife was necessary. The knife, in any case, should be laid flat upon the finger, slipped under the stricture and its edge then turned against it, when, by a slight see-

sawing motion, such as we use in dividing the constriction in a strangulated hernia, the fibers will yield to the requisite extent, and we run no risk of cutting too deeply.

In the treatment of strictures apparently depending upon constitutional syphilis, where the rectum is obstructed by the presence of a deposit resembling that of a gummy tumor, the patient should first be etherized; then the surgeon should introduce two fingers of his right hand into the rectum, and proceed to break down the soft, friable material of which the stricture is composed. Bougies of suitable sizes should then be used at intervals of a few days, the parts kept clean by injecting weak carbolized water several times daily, to be followed each time by a small quantity of common black wash or weak solution of nitrate of silver. The patient at the same time should be carefully brought under the effect of mercury and iodide of potassium, while the general health is maintained by the use of liberal diet and tonics, such as iron, quinine and cod liver oil. Yet, as I have already stated, specific remedies seem to have less effect than in almost any other of the late or tertiary manifestations of syphilis. If the fingers are not sufficiently powerful to break up the deposit, it can be effected with this instrument, which resembles the tri-valve speculum, except that its blades are less flattened and stronger. When closed the instrument is small enough to pass almost any stricture. By turning the handle the blades are expanded and

the stricture divulsed. As the instrument is powerful, care should be taken in using it lest a rupture of the bowel occur, an accident which has happened more than once in the hands of good surgeons.

If there is reason to suppose that ulceration of the bowel exists above the strictured point, nitrate of silver in solution or other stimulating fluid can be applied by introducing a small, flexible male catheter through the stricture and injecting the substance by means of a syringe attached to its outer end.

LECTURE VIII.

POLYPUS OF THE RECTUM—PROLAPSUS OF THE RECTUM.

GENTLEMEN: The first subject for our study this morning is that of polypus of the rectum, a disease which, though most frequently met with during childhood, is not, by any means, confined to that period of life. By the term polypus, as used in this sense, we understand a pedunculated growth, connected with the mucous membrane of the rectum, and which is usually situated not less than one or two inches from the verge of the anus.

It presents itself under two varieties, viz., first as the soft or follicular polypus, and secondly as the hard or fibrous polypus; the former being almost exclusively confined to children under twelve years of age, while the latter is more often found in adults.

In either case the tumor is generally attached to the posterior wall of the gut, though sometimes placed anteriorly or laterally.

The soft polypus is supposed to originate in a hypertrophy of the follicles of Lieberkühn, or of the mucous follicles of the rectum.

It makes its appearance as a small, reddish, gran-

ular-looking tumor, about the size of a large cherry, and having a pedicle of one or two inches in length.

Its surface is covered with a network of small vessels, derived from the mucous membrane.

The tumor is more commonly single, although occasionally as many as fifteen or twenty may develop in the same subject. The pedicle is not often larger than a goose quill, and is composed mainly of the mucous membrane of the rectum, together with the plexus of small vessels just mentioned. In some cases the pedicle is tubular throughout and has quite a large arterial branch running up through its center.

In children the polypus generally presents itself at the external parts during or immediately after a movement of the bowels; it seldom produces pain or irritation, with the exception of a frequent desire to go to stool, or indeed any symptoms of importance save such as arise from a slight discharge of mucus or blood. It is often mistaken by the mother or nurse for prolapse of the rectum or for an external hemorrhoid.

Hemorrhoids, however, are exceedingly rare with children, and prolapsus is not usually accompanied by a discharge of blood.

Hemorrhage from the rectum, therefore, occurring in a young child, will usually be found to depend upon the presence of a polypus unless it follows some acute intestinal disorder, such as inflammatory diarrhœa, or dysentery with ulceration.

It will sometimes happen, however, when the

pedicle is very long that the tumor will be extended during the bearing down efforts at stool, will be strangulated by the sphincter muscle, inflame and give rise to the same train of symptoms which we have when internal piles are exposed to the same kind of mechanical irritation.

In still another rare class of cases, where the pedicle is too short to admit of the tumor passing outside the sphincter, I have no doubt that it sometimes induces a sufficient amount of irritation in the bowel, by its mere presence as a foreign body, to develop an ulcer, which in a short time may become an irritable ulcer, and thus convert itself into a typical fissure, or, under the same circumstances, may lead to an obstinate diarrhœa or dysentery.

The diagnosis can generally be made by the touch on introducing the finger into the rectum. Occasionally, however, when the pedicle is long, slender and attached high up in the bowel the tumor will recede or float away from the finger so that you will learn nothing in that way, and will be obliged to etherize the child, dilate the sphincter, introduce a bi-valve speculum and make an ocular examination.

The treatment is exceedingly simple. Thus, when the pedicle is very small and contains no large vessels, it is only necessary to seize it with a small pair of vulsellum forceps or any other instrument that will hold it securely, and twist it around in one direction until the pedicle breaks off and the tumor comes away; treating it, in other words, as we com-

monly treat a polypus of the nose. On the other hand, if the polypus is vascular, and especially if you can feel a large artery passing through its center, it will be safer to lift the tumor away from its attachment with the vulsellum forceps and apply a soft flat ligature close down to the origin of the pedicle. The ligature should be tied only tight enough to arrest the circulation. If you go beyond this point, or use a round, hard-twisted piece of silk, there is danger of cutting the pedicle off at once, and of having the same amount of hemorrhage as would have resulted from a use of the knife or scissors. The best ligature for this purpose consists of linen tape about one-sixteenth of an inch in width.

The bowels should then be confined for about two days by giving one or two small doses of opium, and at the end of that time a mild aperient will probably bring away the polypus and the ligatures together.

The hard or fibrous polypus differs essentially from the variety just described, consisting usually of an hypertrophied condition of the submucous connective tissue of the rectum; sometimes, however, developing from the circular or longitudinal muscular fibers of the rectum, when it is an almost exact counterpart of the fibroid tumor of the uterus, in fact, a fibro-muscular tumor of the rectum, or according to the nomenclature of Virchow, a myoma.

It is rare in its occurrence and is almost exclusively confined to adults; it is more often multiple than the other variety; its pedicle is usually shorter and

thicker, and is sometimes attached by a very broad base.

Occasionally the tumor contains one or more small cysts in its interior which are filled either with clear serum or with a cheesy material resembling the contents of a sebaceous tumor. The symptoms are such as might be expected to arise from the pressure of any hard foreign body in the rectum, viz., a frequent desire to evacuate the bowel, accompanied by tenesmus and a mucous discharge.

The tendency to hemorrhage is slight except in those rare cases in which the pedicle is long enough to admit of the growth being extruded, strangulated and inflamed by the grasp of the sphincter muscle; under such circumstances it may bleed like the former variety.

The fibrous polypus is so much harder than the other form that it probably more often leads to ulceration by pressure against the opposite wall of the gut, in the manner which I have already described.

As in the other variety the diagnosis is made by exploring the rectum with the finger, or by etherizing the patient, paralyzing the sphincter muscles and making use of a speculum.

The treatment consists in tying a round, firm ligature tightly around the pedicle, close down to the mucous membrane. Now mark the difference in treatment in the two forms of polypus. In the first variety I advised a soft, flat ligature applied rather

loosely. In this form you are to use a round, well-twisted silk cord, and apply it as tightly as possible. The fibrous polypus is so much harder than the follicular variety that unless tied thoroughly the circulation will not be controlled and the tumor will be a long time in sloughing off, to say nothing of the danger of secondary hemorrhage.

If the base of the tumor is too large to be divided in this way, then it had better be encircled with the chain of the écraseur and gradually crushed off. To do this satisfactorily, however, the patient must be etherized and the tumor thoroughly exposed by the use of a proper speculum, since in a few cases, whatever care is use in crushing off the pedicle of the tumor with this instrument, there will be more or less hemorrhage, and you will be obliged to use the actual cautery or some powerful styptic, or possibly to take up a large vessel and submit it to torsion or secure it by the use of the ligature.

Our next subject is that of Prolapse of the Rectum, or Procidentia Recti, a disease which, like the one we have just studied, presents itself under two forms, viz., first as a false or spurious procidentia, and secondly as true procidentia. The first is what we often see in connection with protruded internal piles, as represented in the plate before you, where you notice two hemorrhoidal tumors, one on either side of the middle line of the anus, and on the outside of each, a fold or rim of the mucous membrane of the rectum. This is frequently designated as

prolapsus, but is not strictly correct, since it involves the mucous membrane only, or perhaps the submucous connective tissue at most. The true procidentia, on the other hand, involves all the different coats of which the rectum is composed, mucous membrane, submucous areolar tissue, muscular layers, and, if enough of the gut comes down, the serous or peritoneal covering as well. Again, you will sometimes hear the terms prolapse or procidentia used as though the condition implied was identical with another disorder of the bowel known as intussusception. The difference is simply this: that in procidentia the walls of the bowel are rolled out in such a manner as to form a tumor, often of large size, outside the sphincter externus muscle.

In intussusception one portion of the gut is forced down into that which is below, as though you invaginated a glove finger, by pulling one portion into another; the gut is not outside the sphincter, hence there is no external tumor.

Procidentia is most common in children between two and four years of age, but is sometimes observed in adults. You have recently seen such a case at one of the clinics. The explanation of its greater frequency in young subjects is probably to be found in the fact that the sacrum of a young child is very much less curved than in the adult; secondly, children always seem to expend more muscular force, in proportion, in the act of defecation than is the case with healthy adults, even when the movement is of a soft

consistence. Why this is so I do not pretend to say, but merely state the fact as a matter of daily observation. If you will watch a baby four or five months old when it is having a stool, you will notice that it grows very red in the face, that the veins of the head enlarge, and that it apparently brings all of its strength to bear in the accomplishment of the object. It is true that adults do the same thing when the bowels are constipated, but such is not the normal condition.

Another fact which influences the frequency of the disease in children is that they are perhaps more liable to such diseases as dysentery and diarrhœa, both of which induce a congested state of the vessels of the mucous membrane of the rectum, give rise to a sense of fullness or distention, and a frequent desire to go to stool, accompanied with tenesmus. Again, as I have already stated, children are more liable to polypoid growths in the rectum, which, by their mere presence, may incline the patient to strain or bear down, and thus, after a time, induce prolapsus. Hence the two conditions are sometimes found to co-exist in the same subject.

Phimosis, by compelling the child to strain whenever the bladder is emptied, or a stone in the bladder, for the same reason, are also frequently responsible for the disease.

But perhaps the most common cause of all, in young children, is to be found in the prevailing custom among young mothers of taking the child, when

it wants to have a movement, and sitting it on a vessel which is placed on the floor, so that the child's knees are nearly up to its chin, and leaving it there for a long time.

Many young children, if left in this way and given a plaything, will be perfectly contented for an hour or two; but during the whole of that period they will make straining efforts every few moments; the position of the body seems to incline them to do so. They will fill the chest with air so as to make a fixed point of the diaphragm, and then bring into play all of the abdominal muscles in the bearing-down effort. In this way a prolapse is initiated, while the daily repetition of the same efforts gradually develops the disease.

With adults the disease is generally dependent upon a diseased state of the sphincter and the levator ani muscles, sometimes occurring as a sequel to chronic diarrhœa or dysentery, sometimes as a result of habitual constipation or a severe attack of hemorrhoids. With women it frequently follows a precipitate or a tedious labor. It can sometimes be traced to a stricture of the urethra, a stone in the bladder, or hypertrophy of the prostate gland, all of which may compel the patient to strain in emptying the bladder.

The symptoms will vary considerably in different cases. Where it is slight there may be only a trifling irritation from the contact of the extruded parts with the patient's clothing, accompanied by a discharge

of mucus or mucus and blood. In others of a more chronic character the mucous membrane may lose the soft, velvety character which is natural to it and assume the features of ordinary integument, becoming thicker and more horny in consistence.

In others again the chief annoyance will arise from a complete incontinence of wind and feces, depending upon two causes, viz., first, loss of power in the sphincters; and, secondly, loss of sensibility in the mucous membrane, which, from being almost constantly exposed to outside influences, soon loses its capacity to take notice that a movement is about to occur. In speaking of the treatment let us discuss the disease as it occurs in children first. If a child have chronic diarrhœa, treat that by a suitable administration of astringents and opiates; if there is dysentery use large doses of subnitrate of bismuth internally, and if there is ulceration of the mucous membrane apply nitrate of silver locally. If the child is very much debilitated, give iron, quinine, and cod-liver oil; in other words, attend to the general health. Next make a change in the habits of the child about going to stool; insist that its movements be had in the recumbent position, or in the upright posture, so that it can not make use of its diaphragm and abdominal muscles. If the bowel still comes down with each movement, it should first be thoroughly cleansed with cold water, then wet with an astringent solution of alum or tannin, and finally re-

duced and compelled to keep above the sphincter muscle by the application of a compress and a T bandage. After each reduction the child should lie upon its abdomen for at least one hour.

In more obstinate cases the patient should be brought under the influence of an anæsthetic and the prolapsed mucous membrane touched thoroughly with fuming nitric acid, applied by means of a glass brush or a piece of wood. The parts should then be oiled or washed in some alkaline solution, so as to neutralize the effect of the acid, and reduced as before. The lower two inches of the rectum should then be packed with cotton and a T bandage applied as in the other case over a compress.

You will probably consider this treatment as unnecessarily severe. Practically, however, if you are careful to avoid touching the cutaneous surface with the acid, it produces very little pain; there may be a sense of heat in the rectum after the parts have been reduced, but children seldom complain of it.

An opiate should then be administered, sufficient to confine the bowels for two or three days, after which you may give a dose of castor oil or some other mild aperient, which will bring away the cotton when it acts.

If one application of the acid does not succeed, it may be repeated at the end of ten days or two weeks, and if, in addition to this treatment, you will remember to carry out the directions I have given you about not allowing the child to sit down when it

has a movement, you will cure the larger number of cases.

In reducing the parts temporarily after a prolapse has occurred, a little tact is sometimes requisite; at all events, the mother of the child will often be frightened at its appearance and send for the medical attendant. The simplest method of reduction consists in oiling the index finger and introducing its tip into the opening of the bowel, then carrying it steadily but slowly on into the interior of the gut; as a rule, the protruded mass will follow the finger, reinvert itself and presently disappear.

In a few cases, in which the prolapse has existed long enough to become more or less strangulated by the sphincter, and swollen beyond its natural size, it will be necessary to place the child upon its back, or better, upon its knees and chest; oil the parts as before; then having covered them with a soft napkin, grasp them between the fingers and thumb of the right hand, and make steady pressure in the upward direction. Failing in that, apply a bag of pounded ice for a short time, being careful not to maintain its action long enough to destroy the vitality of the parts, and repeat the same operation.

With adults the same means are to be thoroughly tried, but will more often fail, and will demand a surgical operation for their permanent relief. Two operations are commonly employed. The first consists in removing, with a knife or scissors, one or two elliptical pieces of the mucous membrane from above

downward, and afterward uniting the edges of the wound with fine sutures of horsehair or carbolized catgut.

In performing it care should be taken not to go deeper than the mucous membrane, as the submucous connective tissue is abundantly supplied with bloodvessels from which profuse hemorrhage will take place if they are wounded.

I am sorry to say, however, that while the operation succeeds in some cases, it also fails of doing any good in many others, and I suppose the explanation is to be found in the fact that where the disease occurs in adults there is generally a partial or complete loss of power in the sphincter muscles.

A better method, therefore, because more often successful, is to take a small actual cautery, heated to a dull red or cherry color, and make three or four linear cauterizations from above downward at equal distance apart along the whole of the surface of the prolapsed mucous membrane—one in front, one behind and one at each side. It is not necessary to burn deeply, but only to make a superficial eschar. Next oil the parts and reduce them within the rectum; finally introduce a bi-valve speculum, put the sphincter on the stretch and burn pretty deeply into its fibers at two points on opposite sides; then oil the parts again, apply a compress and T bandage over the anus, put the patient in bed and keep him there until the sloughs have separated and come away.

The *modus operandi* is easily understood. Wherever the hot iron touches a slough is produced; after it has separated, granulation, cicatrization and contraction follow as in the healing of a burn any where else; the longitudinal fibers of the muscular coat of the rectum are shortened as the contraction goes on and serve to hold the other coats in position, while the sphincter externus for the same reason also regains its function of standing as a watchful sentinel at the opening of the gut. The result of this operation which you saw me perform a few minutes ago at the clinic upon a patient with a prolapse of eight years' standing, has been in every way satisfactory.

Within ten days from the use of the hot iron he had regained control of his sphincter muscle, had ceased to be troubled with incontinence, and was happy in being able once more to go among his fellows without having constantly about him the odor of feces.

LECTURE IX.

CANCER OF THE RECTUM—OPERATIONS OF EXTIRPATION AND COLOTOMY.

GENTLEMEN: The subject of cancer of the rectum, to which I invite your attention this morning, is one which has, perhaps justly, been called the disgrace of our art, involving as it does a long history of continued suffering and terminating, almost invariably, in death.

Were it not, therefore, that I deem it my duty to remind you of the little that modern surgery has done for the alleviation, if not for the cure, of this terrible disorder, I would gladly forego its discussion altogether.

You are probably aware that while there are few parts of the body which may not be attacked by cancer, some localities are much more frequently affected by it than others; the rectum being one of its favorite haunts, and standing fifth in the order of frequency, after the uterus, the stomach, the female breast and the liver. Before considering, however, the special subject of malignant disease as connected with the rectum, let me make a few simple explanations of certain terms which are used in

speaking of the general subject of cancer—and which are somewhat confusing when we first engage in its study.

The term *carcinoma* is one which is often made use of. It is of Greek origin and signifies a cancer, being a general term intended to cover nearly all malignant growths, without having special reference to the variety to which they belong.

The term *cancer* in its most limited sense signifies a crab, and was the name given by the ancients to certain malignant tumors, on account of the hideous appearance which they assume after ulceration has taken place or possibly from certain resemblances to the crab, which they imagined to exist in the distribution of a large number of tortuous veins over the surface of one of these tumors. Like *carcinoma*, the term is now generally used to designate a malignant growth of any kind.

In speaking of the varieties of cancer we make use of the word *epithelioma*, by which we mean a form of malignant disease which always develops upon a mucous, a muco-cutaneous, or a cutaneous surface, where epithelial cells are naturally found; closely allied to the true cancers, yet differing from them in several important particulars, notably in its being rarely accompanied or followed by secondary deposits in the viscera, resembling them in its tendency to local infiltration and ulceration, its extension to the lymphatics, and in its tendency to induce death by cachexy.

By the term *scirrhus* we imply a hard cancer—sometimes also called the fibrous or chronic cancer, tending to run a slow course.

By *encephaloid* cancer we mean a soft malignant growth, tending to run its course rapidly to ulceration and to exhaust its victim by hemorrhage—by wasting discharges, cachexy, etc., called also sometimes acute cancer.

Please remember the distinctions as we proceed.

Again, you will hear of *colloid* and *melanotic* cancer.

By the first we understand a malignant growth whose interior is composed of a gelatinous, gluey, semi-liquid material, generally of a greenish or yellowish color. It is a form of cancer which we see more often in the abdominal viscera, especially connected with the ovaries of the female.

By melanotic or black cancer is meant that form of malignant disease which develops in those tissues which are naturally supplied with pigment, such as certain parts of the skin, the choroid coat of the eye, etc. Where it begins in the skin it is usually in one of those peculiar dark spots which we call a mole.

There is one other term, viz., *fungus hematoides*, which you may meet with in some of the older books, though not very much in use at the present day. It signifies, as its name indicates, simply a bleeding fungus, and was the name formerly given to the ulcerated stage of an encephaloid cancer, after the integument has been destroyed and the diseased

mass is pushed forward, until it protrudes through the opening, in the form of an unhealthy, bleeding granular mass.

The different forms of cancer, then, which are liable to affect the rectum, are epithelioma, scirrhus and encephaloid, and they occur, in point of frequency, about in the order named.

The first of these, or epithelioma, as I have already stated, always begins either in the skin, the mucous membrane, or at the junction of the two. Scirrhus and encephaloid, on the other hand, usually, if not invariably, begin in the submucous tissue, and involve the mucous and muco-cutaneous surfaces secondarily if at all. A knowledge of this fact, you will perceive, is of the greatest importance in enabling you to differentiate between epithelioma, which is regarded by most surgeons as the least malignant of all the varieties of cancer, especially in its earlier stages, and scirrhus or encephaloid which are always rapidly progressive in their nature and inevitably fatal in their results. For example, if you were to introduce the finger into the rectum of a suspected case and found that the disease was confined to the mucous membrane, which was nodulated and warty to the feel, yet quite movable over the surface of the underlying tissues, it would be safe to conclude that the disease was epithelioma and not scirrhus or encephaloid.

Recollect, however, that this means of diagnosis is only reliable during the earlier stages of the disease.

On the other hand, if the finger recognized the fact that the disease had begun underneath the mucous membrane, which, although adherent to the deeper tissues, was still smooth and soft, it would be equally fair to conclude that the disease was not epithelioma, but in all probability one of the other varieties.

The diagnosis between scirrhus and encephaloid is not usually difficult if you bear in mind that the former is always intensely hard and stony to the touch, while the latter is soft and of the consistence of brain tissue.

You are to remember, also, in making the diagnosis of cancer, that it is peculiarly a disease of middle life, so that while there are occasional exceptions to the rule, you would hardly expect to find it in very young persons. A few cases are recorded of cancer of the rectum in children under twelve years old; but the exceptions are, after all, only sufficient to prove the rule.

The disease is generally insidious in its origin and uncertain in its progress, frequently giving rise at first only to such symptoms as occur in obstinate forms of constipation, accompanied by occasional attacks of pain, bearing down and straining at stool. As a rule, therefore, it is only after the disease has made some progress and either blood or sero-purulent fluid has escaped, that surgical advice is sought and its presence discovered.

In its earlier stages the surface may be smooth to the touch, but as the disease advances it becomes

hard, knotty, and after ulceration has commenced is nodular and in irregular fungous masses.

The discharge, which begins with the ulceration, is composed of blood, serum, pus, and broken-down tissue, commonly resembles beef-brine, and has a very offensive yet very peculiar and, I may say, characteristic odor.

There is frequently itching about the anus, accompanied at first with slight pain, hardly amounting to more than a sense of uneasiness; later on, the pain increases and begins to make a decided impression upon the patient's health and spirits, until when the disease is fully developed the pain becomes intolerable; it is sharp, lancinating, and characteristic; the difficulty of defecation increases; the patient rapidly loses flesh, the face wears an expression of constant suffering; the skin assumes a sallow, leathery hue, which we call cachexy, and which is indicative of the terrible poison that is slowly but surely undermining the vital forces.

In addition to these symptoms the patient is annoyed with various derangements of the digestive function; there is flatulence, heartburn, acid eructations, and sometimes obstinate vomiting.

In other cases, of long standing, abscesses form around the anus, terminating in long, fistulous tracts, which may open almost any where in the neighborhood externally, into the vagina in the female, or even into the bladder in either sex. As a result of the irritating properties of the fecal matter mixed

with the discharge from the ulcerating surface of the disease, we may have, therefore, as a complication, cystitis or vaginitis, or possibly both in the same subject.

As to the locality of cancer of the rectum, as a rule it develops within three inches of the anus, in the majority of cases beginning a short distance above the external sphincter muscle. As exceptions to the rule, I may remind you that certain cases of epithelioma begin at the verge of the anus, where integument and mucous membrane meet, just as the same form of cancer sometimes begins in the face, at the junction of the skin with the mucous membrane of the lip, and that, on the other hand, certain cases of cancer, of any of the three varieties, begin as high as the sigmoid flexure of the colon. These, however, do not invalidate the rule that in by far the greater number of cases the disease limits itself to that portion of the bowel which, beginning perhaps an inch from the sphincter, terminates from two to three inches above.

Another important fact for you to remember in this connection is, that complete obstruction of the bowel, where the disease is situated low down, is comparatively rare, for the reason that whatever variety the cancer assumes, after the mucous membrane has become involved in the ulcerating process, the destruction of tissue is so rapid and the sloughing off of small fragments so constant in its occurrence, that the caliber of the bowel is kept open to a

greater or less extent. On the other hand, when the disease begins in the sigmoid flexure higher up, complete obstruction is more likely to occur, and as a consequence the disease is liable to terminate fatally at an earlier period from sudden rupture of the bowel, with an escape of fecal matter into the peritoneum, followed by speedy death from shock, or subsequently from peritonitis.

In differentiating between cancer and certain other forms of rectal disease, such as syphilitic stricture for example, a little experience, aided by a cultivated sense of touch, is of great value. Cancer, recollect, in all of the varieties, is hard—at least, in the earlier stages—is nodulated and irregular. The discharge from cancer is of a peculiar quality, as already described, and has a characteristic odor. Syphilitic stricture is soft, smooth, friable, easily broken down with the finger, and the discharge has no characteristic odor.

These are the chief points in distinguishing cancer by the touch. The presence or absence of cachexy cannot be depended upon, since it is often noticed in other diseases of an exhausting nature, and is frequently absent in cases of the earlier stages of well marked cancer.

The case of the woman whose breast I removed at the clinic, last week, on account of a large scirrhus growth, was an illustration of this fact. You will remember what a large, well-nourished, rosy-cheeked, bright-eyed, healthy-looking person she was.

The disease had not yet reached that point where it was constitutional, strictly speaking, and that was why I advised her to have it removed at once.

The history of the case will, of course, aid you materially in coming to a conclusion.

The general treatment of the disease will resolve itself, in most cases, into an attempt to assuage the sufferings of the patient. The rectum should be washed out several times each day, especially after the movements, with a weak disinfecting fluid, such as carbolic acid, permanganate of potash or salicylic acid. For several hours of each day the patient should be confined to the recumbent posture, and for the same reason that I recommended it in the treatment of inflamed piles, viz., to allow the blood in the hemorrhoidal veins to gravitate the other way.

Opium in some form will be called for in almost all cases, sooner or later. A grain of crude opium, given by the stomach three or four times each day, will do better than any thing else for a certain class. Others will find more relief from the use of a suppository of two grains of the aqueous extract introduced into the rectum.

Others will be most relieved by having the opiate injected into the rectum in a fluid form—such as forty to sixty drops of McMunn's elixir or tinct. opium mixed with a little water or thin starch—while still another class experience little relief except from the hypodermic use of morphine, combined or not with the sulphate of atropia.

In using opiates with these unfortunate cases, however, you must bear in mind the importance of never administering a larger dose at any one time, than just enough to relieve pain, for the reason that as the disease progresses and the suffering becomes more intense they will require a constantly increasing amount in order to obtain the same effect; hence it is very desirable to keep them upon as small a quantity as possible, in order to avoid, to the extent of our ability, the injurious effects of the drug upon the general health. The quantities of opium or morphine which are used by these patients are sometimes enormous; thus, I am at present attending a lady with cancer of the rectum who thinks nothing of taking the contents of a drachm bottle of sulphate of morphine at two doses, and I have seen others who would take from two to four ounces of laudanum at a single dose.

In the next place, the strength must be sustained by a good easily-digested, nutritious diet, and the use of tonics, while attention is paid to the regular evacuation of the bowel by giving from time to time almost any one of that class of simple laxatives which I have suggested in the treatment of other rectal diseases, such as the Hunyadi, Carlsbad, or Pullna water, or the various mixtures of sulphur with cream of tartar.

In the way of direct local treatment, caustics of all kinds have been extensively used, but I believe that while seldom of the slightest benefit they almost

invariably do harm by increasing the pain, adding to the irritation, and by their stimulating properties hastening the progress of the disorder.

In a few rare cases in which the cancerous mass has been extruded from the bowel by the straining efforts which its presence in the rectum has excited, it may be wise to remove it in this way, since if cut off with scissors, knife or ligature profuse hemorrhage always ensues. The best caustic to use under such circumstances, is the arsenite of copper made into a paste with mucilage and applied at intervals to the surface of the tumor. It produces very little pain; it destroys the growth promptly, and without the occurrence of hemorrhage.

But I hasten to a conclusion by speaking next in order of what can be done for these cases surgically. In a certain number, where the disease has involved the sphincter muscles and the pain is greatly aggravated by their spasmodic contraction, it is good practice to divide them with the knife as we do in simple fissure, so as to relieve the patient of this element of suffering. Or if the disease extends higher up, provided it is limited to the first three inches, it is recommended on good authority to divide the posterior wall of the rectum, as well as the sphincter, to the extent of the disease.

In other cases, where the disease is encephaloid, and consists of a large softened mass, the verge of the anus may be divided with the knife, the hand, well oiled, introduced into the bowel, passed above

the tumor, and the greater part of it forcibly torn out with the fingers.

In undertaking such an operation great boldness and rapidity of action must be employed, otherwise excessive hemorrhage will be sure to ensue.

In carefully selected cases this method of dealing with encephaloid may give the patient a few additional months of life and comparative comfort.

We come now to consider briefly two operations which at the present day are frequently resorted to, with the view, on the one hand, to the removal of the disease, and, on the other, to the establishment of an artificial anus when the rectum has become so thoroughly involved in the disease as to be no longer capable of carrying on its functions in the economy, or where, on account of the excessive pain produced by the act of defecation, an attempt is made to provide another and easier channel for the escape of fecal matter.

The first of these operations is known as extirpation of the rectum, and may be resorted to in all cases in which the disease does not involve more than four inches of the lower portion of the bowel in the male, or three inches in the female, with certain other restrictions and exceptions of which I will speak in a moment. You will understand why I limit the distance above the anus at which the operation may be undertaken to four inches in the male and three in the female, when I recall to your minds the arrangement of the peritoneum with regard to

the rectum. The fold of this membrane, which covers in the anterior wall of the rectum, at about this distance from the anus, and is then reflected over the base and fundus of the bladder in the male, and over the same portion of the uterus in the female, forming what is known as the pouch of Douglas, or Douglas's cul-de-sac, is in danger of being opened unless this rule is carefully observed. The exceptions, or the contraindications to which I alluded a moment ago, are to be found in those cases in which the disease has involved the neighboring organs, or has even attached itself to them by means of strong and extensive adhesions, so that it can not be separated from them without the risk of great injury being done to these parts. For example, where the uterus, the vagina, the prostate gland, the bladder, or Douglas's cul-de-sac are involved, it seems to me that the operation ought not to be attempted, nor should resort be had to it, when we find that the lumbar and inguinal glands are already greatly enlarged, hard, and evidently the seat of the same disease. These cases, in my judgment, should be left for the second operation, which is known as colotomy.

There are several methods for performing the operation of extirpation, but the one which I shall describe to you this morning consists in making a circular incision around the anus, extending through all the tissues, until the wall of the bowel is reached; if the cancerous mass is outside of the rectal wall,

then the incision will only extend to the requisite depth to reach its outer surface. The finger or some form of blunt dissector is then introduced, and the bowel torn from its connections as high up as it is proposed to remove it. As the dissection goes on, the gut is drawn down until sound, healthy tissue is reached; through this healthy portion a strong ligature is passed on each side to enable you to control it, and the diseased portion is cut off with knife or scissors, or preferably with the actual cautery. The divided end of the bowel is then carefully united to the edge of the skin where the first incision was made by means of any number of interrupted sutures of silk or silver wire.

The last step in the operation, however, is not always practicable when a large portion of the rectum has been removed, and in many cases even in which it can easily be accomplished the swelling and œdema that take place subsequently, tear out the sutures, and the bowel recedes. Practically it does not seem to make any material difference in the ultimate result, since it is a matter of constant experience that where the cut surfaces can not be united, or where they separate after being closed, nature grows the mucous membrane down to the requisite extent, until eventually it meets the skin, unites with it, and the gap is closed and smoothed over as before the operation, so that while union by the first intention is to be aimed at whenever possible, it is not well to close such a wound when there is great tension on the

stitches, with the certainty that they will tear out within a few hours.

If there is hemorrhage from the exposed surface, the cavity should be packed thoroughly with styptic cotton, or cotton dipped in a strong solution of tannic acid. A large sized elastic catheter should pass through the center of the cotton into the interior of the bowel, to provide for the escape of flatus. The bowels should be confined for a few days by the use of opium, the patient kept at rest, and as soon as the danger of hemorrhage has passed and the cotton removed, the parts kept absolutely clean.

An interesting question presents itself at this point, involving the future comfort and convenience of the patient, as to the formation of another sphincter muscle after such an operation.

I do not believe that any sphincter, strictly speaking, is formed, but it is more than probable that some of the muscular fibers of the rectum, such as originally formed the internal sphincter, become enlarged, and in a certain sense perform the office of such a muscle, while the orifice of the bowel at the site of wound undergoes contraction in such a way that unless the contents of the rectum are in liquid form the patient will have the ability to control the movements.

The possibility of incontinence resulting from the operation, however, ought not to deter us from performing it, inasmuch as many of the cases in which it is resorted to already suffer from incontinence, on

account of the destruction of the sphincter muscles in the ulcerating process; to say nothing of the fact that the operation often gives a poor sufferer immunity from the disease, and therefore from pain, for a period ranging from a few months to one or two years.

A few words now, gentlemen, with regard to the operation which is designated as colotomy, and which is reserved for those cases in which the disease has extended so far up the rectum, or has involved other parts and organs to such an extent as to render the operation of extirpation unsafe and, therefore, unjustifiable.

There are two principal forms of colotomy; the first known as *inguinal colotomy* or Littrë's operation, consists in making an opening in the left inguinal region, in order to reach the descending colon, and establish at that point an artificial anus. It involves, of course, the wounding of the peritoneum and is, therefore, objectionable; indeed it is seldom resorted to at the present day on that account, except in a few rare cases of congenital occlusion of the bowel in newly-born children, where it is sometimes preferred to the operation of lumbar colotomy, or Amussat's operation, on account of the increased difficulties of the latter, at that period of life, depending upon the size and position of the kidney and the great length of the meso-colon.

To perform Littrë's operation an incision three inches or more in length is made in the left iliac region over the tract of the descending colon, and ex-

tending through the skin and superficial fascia down to the first layer of muscle; this is carefully raised with the dressing forceps or tenaculum, a small opening made in it, a grooved director passed under the muscle, which is then divided to the full extent of the cut in the skin. In this manner layer after layer of muscle is divided, until the fascia transversalis and peritoneum are reached; having divided these carefully, the colon will present itself to view. Two strong sutures of silk are next passed through the wall of the intestine, and also through each side of the incision in the abdominal walls, at a distance of about one and a half inches apart.

The bowel is then opened longitudinally between the sutures for a distance of about one inch. The loops of the sutures are drawn out of the interior of the gut, divided in the middle and the ends tied on each side in a square knot, thus serving the double purpose of securing the divided edges of the bowel to the incision in the skin, so as to prevent extravasation of fecal matter into the peritoneal cavity, and of maintaining the artificial opening in the colon in a patulous condition. Other sutures are then introduced, so as to unite the whole circumference of the opening in the gut to the external wound.

The operation of lumbo-colotomy, proposed and attempted by Callisen, but first practiced and perfected by Amussat, is based upon the anatomical fact that the descending colon is covered by folds of peritoneum on its anterior surface and sides which

form the meso-colon, while its posterior surface is left uncovered by this membrane, and is held in position simply by areolar tissue, thereby rendering it feasible to reach this portion of the bowel from the lumbar region externally without wounding the peritoneum.

Amussat's first operation on the living subject was performed in 1839, since which time it has taken a recognized position in surgery.

The operation is not difficult, provided the surgeon is fully alive to the necessity for precision in its performance, the occasional failures to find the intestines having arisen for the most part in searching too far from the spinal column.

The anatomical guide to the colon in this locality is the free edge of the quadratus lumborum muscle, which, you will remember, is of a quadrilateral shape, as its name indicates, situated between the posterior part of the crest of the ilium and the lower border of the last rib.

As Mr. Allingham has pointed out, however, the edge of this muscle is not always easily found in fat subjects, and hence the necessity for having some more definite and unmistakable landmark.

This he obtains by marking a spot with ink on the crest of the ilium half an inch posterior to its middle, measured between the anterior superior and the posterior superior spinous processes. From this point I would advise you to mark a vertical line upward to the lower border of the last rib, which will

indicate almost to a certainty the position of the free edge of the muscle in question.

The incision three to five inches in length is then made obliquely from above downward, and from behind forward between the crest of the ilium and the last rib in such a manner that its center shall correspond to the marked line just described. The structures should all be divided carefully on a director—each anatomical part being clearly made out as you proceed, until the edge of the quadratus lumborum is reached.

When recognized, a blunt pointed bistoury should be passed underneath, and its edges divided to the requisite extent. A mass of fat will then be exposed, embedded in which you will find the colon.

After freely exposing it, if any doubt still remains as to the possibility of its being a portion of small intestine, by remembering two practical points you will be enabled to decide the question beyond a peradventure.

In the first place, the longitudinal fibers of the muscular coat of the large intestine are arranged in three flat bands, each being about half an inch in breadth. These are not present in the small intestine. Secondly, the small intestine moves upward and downward with each act of inspiration and expiration, while the colon, being more securely attached to the walls of the abdominal cavity by the mesocolon is wholly unable to take part in these movements.

Having satisfied yourself upon this point, the intestine is transfixed with needles carrying strong silk sutures at two points about one and a half or two inches apart, by means of which, as in Littrë's operation, the bowel is fastened to the edges of the center of the wound in the other tissues. The operation is completed by opening the bowel between the ligatures and by applying a sufficient number of sutures to secure the edges of the opening in the gut to the edges of the divided skin, and to prevent all possibility of extravasation of fecal matter. The remainder of the wound in the side is also closed with interrupted sutures and adhesive plaster, a compress and broad bandage applied and the patient placed in a comfortable bed.

When about to operate, the patient should be anæsthetized, placed in the prone position on a hard couch or table, with a slight inclination toward the right side, and with a hard pillow adjusted under the left side in such a manner as to render the loin prominent and tense. The rectum should be cleared out by two or three large injections of warm water, and, after the external incision has been completed, the colon should be inflated by pumping it full of air by means of Davidson's syringe.

The wound usually heals kindly in a few days. The patient must then provide himself with a hollow pad attached to a belt which will receive the fæcal matter as it passes from the new anus.

You may ask me if the remedy is not worse than

the disease, and I answer no! On the contrary, many patients are infinitely more comfortable than they possibly could have been under any other treatment. The artificial anus is not as troublesome as you would naturally suppose.

To be sure the disease is not cured; it will still pursue the even tenor of its way until the patient succumbs; but the function of the rectum, upon which the suffering incident to cancer in this locality so largely depends, is abolished forever; and the great relief which has followed the operation in the large number of cases in which it has been resorted to, together with the comparatively slight amount of risk attending the operation itself, place it in a position in which we can wisely recommend it to patients suffering with this dreadful disorder, as perhaps the only means which offers the slightest hope of prolonging life or even rendering it endurable.